DOES BEING HOPEFUL MAKE YOU GREEN?

A thesis submitted in the partial fulfilment of the requirement for the degree of

MASTER OF ARTS IN PSYCHOLOGY

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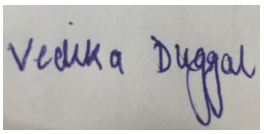
Abstract

This study explored the mediating role of hope between environment identity and pro environment behaviour. A mixed method approach was adopted. A correlational research design was adopted to explore the proposed relationship. This was done in two separate groups of students. One doing a classroom focussed environment course (N=288) of the age group 18-20 years the Engineering students, another doing an experiential oriented environment (N= 188) course, the Management students. In both the groups environment identity was found to be a strong predictor of pro environment behaviour. Role of hope as a mediator was found only in Engineering students . This relationship was further explored in an experimental setting. Three different stories of the environment i.e control, accidental environmentalist and intentional environmentalist were adapted from Sabherwal and Shreedhar (2022). It was found that the three conditions differed across environment identity and pro environment behaviour but not climate change hope. In conclusion, incorporating narrative-based environmental education methods, such as storytelling, can effectively enhance students' environmental knowledge, attitudes, and behaviours, fostering a deeper connection with nature and promoting pro-environmental behaviour.

Keywords: Environment identity, Pro environment Behaviour, Hope , Climate Change , Narratives

CERTIFICATE

This is to certify that the thesis entitled, 'Does Being Hopeful Make You Green?' is being submitted in partial fulfilment of requirements for the award the of the degree of Master of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala is a bonafide work carried out under the supervision of Dr.Ipshita Chowdhury, Assistant Professor , Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala and that no part of this project has been submitted for the award of any other degree.



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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, 'Does Being Hopeful Make You Green?' submitted in partial fulfilment of requirements for the award the of the degree Master of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala, is an authentic record of my work carried out under the supervision and guidance of Dr.Ipsita Chowdhury , Assistant Professor, Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala and refers other researchers' work which are duly listed in the reference section.

The matter embodied in this thesis has not formed the basis for awarding any other degree at this or any other university.

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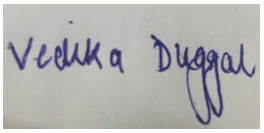

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CHAPTER 1 : INTRODUCTION

1.1 Environment Identity

Environmental identity is defined as an aspect of one's self-concept in relation to the natural world, as defined by Clayton (2003): A sense of connection to some aspect of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that influences how we perceive and act toward the outside world is known as environmental identity. It is a belief that the environment is significant to us and an important component of who we are. Environmental identity is crucial for examining how a person's sense of self guides his or her activities and behaviours "for being for the environment," as stated by Payne (2001), who claimed that there is a "significant "gap" in the discourse" on identity in environmental education research. Similar to this, Stets and Biga (2003) suggested that identity theories are better adapted to forecasting environmental actions across settings than theories on how attitudes toward the environment affect behaviours because they recognise bigger social structures.

Environmental identities come from experiences (e.g., with the natural world) and from socially constructed social understandings of oneself (Chawla, 1999). These experiences should be emotionally significant and that affect the ways in which people think about themselves as well as how they relate to others. In the context of the environment, the term "environmental identity" refers to an individual's self-concept that is influenced by personal experiences and shaped by social interpretations. It is a relatively stable way of perceiving oneself and one's relationship with the environment. People who place a high value on the environment perceive themselves as part of and dependent upon the natural world. This feeling of kinship seems to motivate environmental protection and activism (Matsuba et al., 2012). Clayton (2003) conducted a study that found a positive association between environmental identity and a collectivist worldview. Additionally, Clayton (2008) found a negative association between environmental identity and social dominance orientation, which is a perspective that views the world as hierarchically organised. Similarly, Reese (2016) found that having a global identity, which involves feeling connected to people around the globe, is negatively associated with social dominance orientation and positively associated

with pro-environmental behaviour. These studies suggest that having a sense of environmental identity is fundamentally a recognition of one's interdependence with a larger collective, and that it is related to other perspectives and attitudes that emphasise connections and the larger group.

According to Clayton (2012) and Zavestoski (2003), identity refers to the way individuals perceive and position themselves within society, which helps them connect with social groups. People can have multiple identities simultaneously, such as being a parent, teacher, and environmentalist. Identity is crucial for self-image and self-presentation, which can influence how individuals feel, perceive, and act in various situations (Baumeister, 1998; Clayton, 2003; Onorato & Turner, 2001).

Whitmarsh and O'Neill (2010) define pro-environmental self-identity as an individual's perception of themselves as environmentally friendly. This type of identity is distinct from environmental identity, which refers to a person's view of nature as part of themselves. Pro-environmental self-identity reflects an individual's belief that they behave in an environmentally responsible way (van der Werff et al., 2013). Individuals with a strong pro-environmental self-identity are motivated to behave congruently with their identity for self-verification (Zavestoski, 2003). As a result, they are more likely to exhibit pro-environmental attitudes and behaviours (Fielding, McDonald, & Louis, 2008; Whitmarsh & O'Neill, 2010), as well as greater environmental concern (Brick et al., 2017; Lange, Steinke, & Dewitte, 2018; O'Brien et al., 2018).

Role of education in the development of environmental identity

Research has shown that direct experiences in nature are important in affecting attitudes and behaviours, particularly in primary and secondary education where the curriculum is general (Duerden and Witt 2010). However, to increase environmental identity among adults, targeted information found in advanced degree programs related to environmental issues or the natural world may be more effective. Studies have found that students majoring in outdoor recreation, parks, and tourism programs, as well as environmental studies programs, score higher on environmental concern and self-reported behaviour compared to students in other majors (Arnocky and Stroink 2011; Heyl, Moyano-Diaz and Cifuentes 2013). Additionally, taking courses related to environmental studies can lead to increased scores on

measures of environmental attitudes, such as the New Ecological Paradigm (NEP) (Kuo and Jackson 2014; Karpudewan, Ismail and Roth 2012). Brody and Ryu (2006) found that taking a graduate course in sustainable development led to a statistically significant decrease in ecological footprint among students, while a control group enrolled in the same university who took a course unrelated to sustainability did not show the same decrease. However, it should be noted that differences in environmental concern and behaviour among individuals in specific degree programs may be influenced by pre-existing interests and values rather than a causal impact of the program itself (Arnocky and Stroink 2011).

According to research, environmental education is most effective when it includes direct experiences in nature, which can create a link between knowledge and behaviour (Duerden and Witt 2010). However, most studies on this topic have focused on primary and secondary education, which typically has a broad curriculum. To promote a sense of environmental identity among adults, it may be more effective to provide targeted information on environmental issues and the natural world through advanced degree programs. Arnocky and Stroink (2011) note that the differences in environmental concern and behaviour among individuals in specific degree programs do not necessarily indicate a causal impact of the program, as students tend to choose a discipline based on their pre-existing interests and values. Nevertheless, research shows that students majoring in outdoor recreation, parks, and tourism tend to score higher on environmental concern and self-reported behaviour than students in other majors (Arnocky and Stroink 2011).

1.2 Pro environment behaviour

According to Stern (2000) , PEB is "defined from the actor's standpoint as behaviour that is undertaken with the intention to change (normally, to benefit) the environment" . Stern takes an intention-oriented approach to understanding PEB. Instead, Steg and Vlek (2007)suggest that PEB consists of acts made that are beneficial to the environment or reduce environmental damage, with less emphasis on the behaviour's motivation. Hines made the case that pro-environmental action is conscious and is influenced by individual attitudes and personal responsibility as early as 1990 .

Pro-environmental behaviour (PEB) refers to actions taken by individuals to protect the environment, and it encompasses a range of behaviours from engaging responsibly with

nature to taking adaptive measures to mitigate the impact of climate change such as purchasing sustainable products, conserving resources, and changing travel modes(Krajhanzl (2010). Examples of PEBs include recycling household waste, purchasing locally sourced food, using green cleaning products, conserving water and energy, switching from driving to walking or cycling, and building an off-grid home.(Jackson,Van Valkengoed; 2020,2019).

Pro-environmental behaviour can be motivated by a variety of factors, including personal beliefs, social norms, and a desire to protect the planet and future generations. Individual behavioural decisions are crucial for promoting environmental sustainability. Human conduct has frequently been a significant contribution to a variety of environmental problems (Wynes and Nicholas (2017); Clayton and Howard (2011).

Understanding the elements that go into engaging in actions that safeguard the environment and lessen human impact on it is crucial (Gifford, 2014). Environmental sustainability is threatened by a range of issues such as global warming, water shortages, urban air pollution, environmental noise, and loss of biodiversity. Human behaviour is often the root cause of these problems and hence modifying behaviour can be an effective solution to reduce their environmental impacts (DuNann Winter & Koger, 2004; Gardner & Stern, 2002; Vlek & Steg, 2007). Although technical advancements like energy-efficient appliances, home insulation, and water-saving devices can help, they are often outweighed by increased consumption (Midden, Kaiser, & McCalley, 2007). Therefore, modifying human behaviour is necessary for addressing environmental sustainability concerns. Pro-environmental behaviours include reducing energy use or saving electricity (e.g., turning off lights when not in use), using green transportation methods (e.g., taking public transportation, walking, riding a bicycle, or driving an electric vehicle), recycling (e.g., reusing plastic, paper, or glass containers), conserving water (e.g., limiting water use while taking showers or doing other household chores, etc.), reusing (e.g., disposable cups), properly disposed (A. Chatterjee, 2021; Bissing-Olson et al., 2016; Berg & Möser, 2007).

1.3 Hope

The philosophy of hope has a long history.Affective, cognitive, and/or motivational states that represent how people relate to a desired but uncertain future are generally conceptualised as such in the context of psychology (Lazarus, 1991; Peterson & Seligman, 2004). Lazarus

(1991) defined hope as both an emotion (a desire to be in a different situation in the future) and a cognitive appraisal of wishing for a desired-yet-unlikely goal to come true. Ojala (2016) advanced Lazarus's idea that hope is a coping mechanism by arguing that different coping strategies result in diverse forms of hope. Constructive hope, which is defined as the capacity to face environmental uncertainty and to hold the conviction that one's actions and the actions of others have the potential to make a difference, is the name she gave to the hope felt by students who used problem-focused and meaning-focused coping strategies. A hope based on denial that climate change is a serious issue, that new technologies will soon solve it, or that it will only affect people who live far away or in the far future, on the other hand, is only capable of being expressed by young people who engage in emotion-focused coping by denying or distancing themselves from environmental problems (Ojala, 2012a).

Hope is made up of three main components according to Snyder's (2000) popular cognitive theory of hope, which firmly grounds hope in its cognitive-motivational action components: 1) goal setting (i.e., having a clear idea of future goals that are of sufficient value, long-term, and future-oriented; Snyder, 2000); 2) pathways thinking; and 3) agency thinking or "goal-directed energy" (Snyder, 2002)—feeling motivated to put such pathways into action or hold a strong belief in one's ability to achieve. It is suggested that persons with high levels of hope have various paths to achieving their objectives and the capacity to create new paths around difficulties. This is in line with the idea that the key elements of goal formulation, pathways thinking, and agency are interrelated. Snyder's approach clearly articulates the cognitive and behavioural elements of hope, making it particularly pertinent for examining hope that directly motivates proactive actions. As a result, it has already been successfully applied to global environmental concerns (Li and Monroe in 2019; Grund and Brock in 2019.)

One criticism of Snyder's theory is that he defines objectives quite broadly to include anything that a person aspires to do or experience. The pursuit of some goals (such as societal advancement, democracy, and the common good) is valued over others in contrast to other pragmatic and social theories of hope. Snyder's theory has also been criticised for being unduly individualistic because it was created in a therapeutic setting where people were pursuing their own, individual goals or dealing with disease (Bernardo, 2010). The application of Snyder's theory of hope to societal issues like climate change is particularly challenging because hope in this context is based on a shared vision of social change for all

of humanity and requires the actions of societal actors such as scientists, environmental organisations, and politicians to effectively address climate change (Bar-Tal, 2001; Braithwaite, 2004; Courville & Piper, 2004; McGeer, 2004; Ojala, 2016a). Similar to other thinkers, Freire (1970) saw hope as being based on an awareness of how dire things are now and the 'untested plausibility' of a better future. According to the research of both of these thinkers, hope entails a conflict between realism (what is likely) and idealism (what is possible), with hope acting to promote liberation and emancipation. In general, a key distinction between psychological and philosophical conceptions of hope is their foundation in specific psychological visions and goals as opposed to being more open to the future (Lazarus, 1991; Snyder et al., 2001).

In order to motivate individuals to take action to mitigate and adapt to the effects of climate change, it is important to encourage hopefulness and alleviate feelings of despair and helplessness. According to Snyder, Rand, and Sigmon (2001), hope is exhibited through an individual's ability to continue working towards a goal and generating new ideas for achieving it. Additionally, Chadwick (2010) emphasises the importance of aligning the goals embedded within messages with the individual's own goals, as well as encouraging the belief that climate change mitigation goals are possible. This can be achieved by highlighting agency and pathways and emphasising that the goal is achievable and worth striving for. Finally, the message must also present a positive view of the future. In this research, Snyder's hope theory, which focuses on goals and cognitive sets, is used to predict environmental behaviour (Chadwick, 2010; Snyder et al., 2001). According to Marlon et al. (2019), individuals who possess "constructive hope" - hope that is grounded in human intervention - are more likely to have intentions of engaging in climate political behaviour than those who hold "false hope" that an issue will improve on its own.

1.4 Relationship between Environment Identity and Pro Environment Behaviour

According to various psychological theories, individuals have a strong motivation to maintain positive self-identities and positive social relationships (Fiske, 2010; Leary, 2007; Steele, 1988; Swann and Bosson, 2010). This can lead individuals to engage in public behaviours, such as speech and clothing choices, that demonstrate their positive identities to others. For instance, consumers may choose products, like a Prius®, that signal an eco-friendly identity

to others (Berger & Heath, 2007). Individuals sometimes act against their own self-interests, such as neglecting their finances, health, and the natural environment. This may be due to the desire to signal positive identities based on what is valued in their social context (Anderson, Hildreth, & Howland, 2015). Therefore, whether someone will adopt pro-environmental behaviour, like reducing meat consumption, may depend on social norms and how others are expected to react to that behaviour (Cialdini et al., 1990; Loughnan et al., 2014). We suggest that identifying with environmentalists is the most important identity for expressing and signalling pro-environmental behaviour.

Different social groups have varying responses to climate change, pollution, and deforestation, with environmentalists valuing sustainability and opposing regulations, while anti-environmentalists view nature as a resource for human use and oppose environmental regulations (de Groot & Steg, 2008; Ogbu, 1994). Environmental and anti-environmental identities are important social group memberships that individuals are motivated to signal through clothing, speech, vehicles, and other markers (Dono et al., 2010; Fielding et al., 2008). Environmental identity is usually based on an individual's personal relationship with nature and beliefs about the proper role of humans on earth, which are influenced by environmental values, attitudes, personal norms, and behaviour (Clayton, 2003; Stern, 2000; Steg et al., 2014). Engagement in environmentally friendly behaviours, particularly difficult and unique ones like purchasing an electric vehicle, can increase an individual's environmental identity and strengthen their personal norms to act sustainably (van der Werff, Steg, & Keizer, 2014; van der Werff, Steg, & Kaizer, 2013).

1.5 Pedagogy, Identity and Behaviour

Educators can create learning spaces that support positive identity development by acknowledging and valuing students' cultural identities and personal stories (Esposito & Swain, 2009). This approach can help foster a classroom environment that honours diversity and promotes inclusion. According to research in environmental education, learning experiences in natural environments play a crucial role in the development of students' environmental knowledge, attitudes, and responsible actions. Several studies have shown that direct experiences with nature have a greater impact on pro-environmental behaviour than formal education or awareness-raising efforts (Ballantyne and Uzzell, 1994; Ballantyne, Connell, and Fein, 1998; Ballantyne, Fein, and Packer, 2001a, 2001b; Ballantyne and Packer,

2002; Bogner, 1998; Lai, 1999; Rickinson, 2001; Tanner, 2001). For instance, Palmer's study (1999) involving 1259 students from nine countries, including Australia, found that direct experiences with nature had a far greater impact on subsequent involvement in pro-environmental activities than formal education. Similarly, Finger (1994) found that nature experiences were a better predictor of environmental behaviour than environmental awareness, information, or value orientations.

Environmental Education (EE) is a key element in preventing and resolving environmental problems, according to several authors, including Makki, Abd-El-Khalick, and BouJaoude (2003) and Tuncer, Ertepinar, Tekkaya, and Sungur (2005). Studies conducted in Turkey indicate that middle school students consider schools as one of the primary sources of information regarding environmental problems such as climate change (Higde, Oztekin, & Sahin, 2017), and nature education programs have been shown to have a significant impact on individual environmental awareness, attitudes, and behaviours (Erten, 2005; Karataş, 2011; Keles, Uzun, & Varnaci-Uzun, 2010; Miser, 2010; Samur, 2018). Esa (2010) emphasises that teachers are the most influential individuals in educating children and adolescents to become tomorrow's leaders in environmental advocacy. However, the quality of learning is significantly influenced by teachers' knowledge and skills (Akçalı & Demircioğlu, 2017), choice of teaching methods (Mikerova, Sergeeva, Mardirosova, Kazantseva, & Karpenko, 2018), and teaching aids (Acar, Tertemiz, & Taşdemir, 2018).

In the past, education was seen as primarily about transferring knowledge. However, research suggests that simply imparting knowledge is not enough to foster environmental awareness and concern. Instead, modern education should have a variety of goals, including changing attitudes, behaviours, and self-perceptions. It's important to understand that pro-environmental attitudes and behaviours are influenced by social, political, and economic contexts, as well as individual values and identity. Environmental education can help people change their identity to feel more connected to nature, which can elicit an emotional response and motivate action. This sense of connection to nature is a crucial factor in creating environmental concern (Clayton 2012; Gifford and Nilsson 2014; Sauvé and van Steenberghe 2015; Kollmuss and Agyeman 2002; Abrahamse et al. 2005).

Environmental education is crucial in higher education for two reasons. Firstly, studies indicate that waste and pollution issues often stem from everyday behaviours (Fryxell and Lo,

2003). Secondly, environmental education can incorporate knowledge, behaviours, and concerns into students' future professional contexts, ensuring sustainability after graduation (Butt et al., 2014; Malik et al., 2019). As a knowledgeable group, students' awareness and behaviour can significantly impact the environment (Li et al., 2019; Malik et al., 2019). Therefore, higher education institutions bear the responsibility of developing socially responsible graduates (Coman, 2008). Despite this, campuses face challenges in integrating sustainable development, which affects the quality of the learning environment (Ramos et al., 2015). This problem must be addressed to ensure that the learning environment is conducive to learning.

The pedagogical content knowledge model encompasses a teacher's understanding of subject content, how they represent it, and how learners understand it. It includes both subject knowledge and general teaching knowledge, going beyond just knowing the material. This model was proposed by Lee Shulman (1986), an American educational psychologist. Shulman identified three categories of teacher knowledge: pedagogical knowledge, subject matter knowledge, and pedagogical content knowledge. Pedagogical knowledge refers to teaching principles, methods, and strategies, while subject matter knowledge emphasises the facts, concepts, and principles of a subject area. Pedagogical content knowledge highlights the importance of teachers using a systematic approach to present subject matter in the most effective way and understanding students' prior knowledge and understanding of the subject.

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1.6 Mediating Role of Hope

According to Kopardekar (1985), environmental education (EE) can aid in rebuilding the connection between humans and their environment. Educating individuals about the environment can also assist in mitigating the harm caused by human activities on the natural world in everyday life. According to Siddqui and Khan (2015), the current Indian Environmental Education curriculum lacks comprehensive and informative content for students. The authors suggest that curriculum designers should focus not only on theoretical aspects but also on giving ample opportunities for learners to explore the environment themselves and realise the interconnection between humans and the environment, as well as the responsibilities we have in taking care of it. The content should be relevant to learners and address significant societal problems, while also providing learners with the skills necessary for lifelong learning. Firsthand experience is crucial for learners to understand

environmental problems and be motivated to find solutions. Therefore, the content of environmental education should be practical and encourage future generations to take initiatives in improving the degraded state of the environment.

Marcinkowski (1989) suggests that having a sensitivity towards environmental issues has a positive impact on an individual's understanding and practice of responsible citizenship. While factors such as attitude towards pollution, technology, and economics have been found to influence variables, their effect is not very significant. Thus, there is a need to restructure the current educational programs to promote knowledge, competence, principles, values, and attitudes towards sustainability. Research has shown that involving young people in environmental education programs can lead to greater understanding of the relationship between humans and the environment and foster a sense of responsibility towards it. This can encourage positive environmental behaviours and a feeling of empowerment and ownership. These variables are important for achieving sustainable development and educational reform.

Environmental education has been recognized as a vital tool in promoting environmental protection and resource conservation, particularly in developing countries (Cooper et al., 2007; Barnett et al., 2006; Lieberman & Hoody, 1998; Hungerford & Volk, 1989; Ford, 2004). It has the potential to create awareness, knowledge, and a sense of responsibility towards the environment.

Additionally, the concept of hope plays a significant role in shaping pro-environmental behaviour. When individuals have hope for the future of the environment, they are more inclined to engage in actions that support environmental conservation and work towards safeguarding the natural world for future generations. By fostering a sense of hope, environmental initiatives can inspire and motivate individuals to take proactive steps in preserving the environment.

In conclusion, through environmental education and the cultivation of hope, we can encourage individuals to develop an environmental identity and actively participate in pro-environmental behaviours, leading to a more sustainable and eco-conscious society.

1.7 Narratives

The narrative is defined as, “a representation of connected events and characters that have an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic being addressed.” . According to this definition, a narrative is a symbolic representation of events with temporal relations or causality. Narratives are more

persuasive than non-narratives because they increase engagement by directing the viewer into the fictional world of the story and making the audience identify with its characters . Viewers involved in the narrative participate in the storyline and immerse themselves in the narrative process with the emotions of the characters and the course of events within , whether fictional or not . Glaser et al.(2009) noted that compared to traditional explanatory courses, the narrative provides four factors that facilitate the acquisition of scientific knowledge: dramatisation, emotionalization, personalization, and fiction. In the field of environmental protection, studies have shown that climate change issues expressed in narrative terms promote environmentally beneficial behaviours more than explanatory text . The use of narratives has been associated with an increase in intention (Dal Cin et al., 2004). The use of narratives is a part of human nature; the earliest narrative artefacts were discovered in prehistoric periods (Dal Cin et al., 2004). When presenting a narrative that details, for instance, the effects of climate change in a particular situation, one may be able to mentally simulate the scenario and forge a tangible mental image role (Slater & Rouner, 2002; Wildrich, 2012). Narratives have been shown to be helpful in changing attitudes and intentions more generally, for instance in the field of health communication (Kreuter et al., 2007). It is pleasant to communicate and receive information through narratives since they are a fundamental type of human contact (Kreuter et al., 2007). Additionally, narratives draw attention, can compel action, and can evoke vivid images in people's minds because they typically share the same global mental architecture (Green, 2008). Many studies showing the effects of narratives on attitudes and behavioural intentions (e.g., Hinyard & Kreuter, 2007) support Green's (2008) claim that narratives can motivate people to take action. Identification plays a significant part in the so-called transit process, which is thought to be essential to eliciting persuasive effects (Green, 2008; Wildrich, 2012; Slater & Rouner, 2002). Narratives showing the personal story of persons who were already able to change their behaviour appear to motivate people more to show preventive behaviour than factual information does. Stories may be very useful for boosting visualisation. When a reader is drawn into a story, their comprehension of the characters and events deepens, adding to the topic's imagery (Green, 2006).

CHAPTER 2 :LITERATURE REVIEW

2.1 Environment identity with Pro Environment Behaviour

Research has found that people who have a strong environmental identity are more likely to engage in pro-environmental behaviour. For example, a study conducted by Whitmarsh and O'Neill (2010) found that people who identified strongly with nature were more likely to engage in environmentally friendly behaviours, such as using public transportation, recycling, and buying energy-efficient appliances. Similarly, a study by Mayer and Frantz (2004) found that people who felt connected to nature were more likely to engage in pro-environmental behaviour, such as reducing their use of plastic bags and buying eco-friendly products. Additionally, studies have found that environmental identity can also mediate the relationship between environmental knowledge and pro-environmental behaviour. For example, a study by Kals et al. (1999) found that environmental identity mediated the relationship between environmental knowledge and pro-environmental behaviour. This study examines the role of identity in shaping pro-environmental behaviour. The authors argue that environmental identity, or the degree to which one identifies with the natural world, can predict a range of pro-environmental behaviours. Schultz proposes a model of environmental concern that distinguishes between concern for self, concern for other people, and concern for the biosphere. The study finds that concern for the biosphere is the strongest predictor of pro-environmental behaviour. This review summarises findings from a range of studies on pro-environmental behaviour.

Moreover, it has been suggested that experience of the natural environment plays an invaluable part in the construction of environment-related identities (Bragg, 1996; Holmes, 2003; see also Loughland, Reid, Walker, & Petocz, 2003). For example, in one recent study, environmental identity was found to increase significantly for adolescents after an immersed (3 days) experience in woodland (Hinds, 2009). Similarly, the frequency of being in nature has been found to be moderately and positively related to a measure of nature relatedness (Nisbet, Zelenski, & Murphy, 2009) and place attachment (Vorkinn & Riese, 2001). Nord, Luloff, and Bridger (1998) found strong correlations between frequency of visits to forest areas and self-reported pro-environmental behaviours such as contributing money to environmental organisations and environmentally conscious consumerism.

The concept of identity is supported by some studies, like research that found conservatives were less likely to buy energy-efficient light bulbs that had a sticker saying “Protect the Environment ". When a person's identity is consistent with a certain behaviour, such as a liberal buying a “green” product, it may increase the frequency of that behaviour when it is visible to others. However, conservatives may not choose to publicly engage in such behaviour if it goes against their identity. (Grommet, Kunreuther, & Larrick, 2013). This suggests that individuals' political ideologies, in this case, conservatives, influenced their behaviour regarding purchasing energy-efficient light bulbs. The presence of an environmental message on the light bulb sticker, which aligns with liberal values of protecting the environment, may have made conservatives less likely to choose those bulbs.

Several research studies have identified the negative traits that people associate with environmentalists, such as being aggressive, militant, and unclean. The findings indicated that individuals who have these negative perceptions were less likely to engage in pro-environmental behaviour and affiliate themselves with environmentalists (Bashir, Lockwood, Chasteen, Nadolny, & Noyes, 2013). When people are aware of the negative aspects of environmentalism, social visibility may actually reduce pro-environmental behaviour, as individuals are motivated to maintain their social reputation and avoid being labelled negatively .

Cuadrado et al. (2015) used an online simulation to compare the pro-environmental choices of environmental studies students and education students in Spain, and found that environmental studies students made significantly more pro-environmental choices. Heyl, Moyano-Diaz, and Cifuentes (2013) also found that students in environmental programs had more pro-environmental attitudes and behaviour than those in other programs, with a slight positive trend associated with advancement through the degree program. Kuo and Jackson (2014) found that engineering students who took an environmental studies course showed an increase in scores on an environmental attitude measure, while Karpudewan, Ismail, and Roth (2012) found that pre-service teachers who completed a green chemistry curriculum as part of their science teaching degree showed increased NEP scores. Brody and Ryu (2006) found a statistically significant decrease in ecological footprint among students who took a graduate course in sustainable development, but not in a control group of students who took an unrelated course at the same university. Huxster, Uribe-Zarain, and Kempton (2015) found that membership in environmental groups was a stronger predictor of climate change knowledge than enrollment in a science major.

Horwitz (1996) did a qualitative study with 29 environmental activists, asking them to write about the events in their lives that influenced their views on the environment. Several of the participants, according to her findings, "described pivotal experiences [which] had a strong emotional or spiritual dimension (e.g., solitary experiences in nature; observations of environmental destruction)," and "the emotional response seems to work synergistically with an intellectual foundation, particularly with one derived from informal reading, formal education, and teaching."

A similar model was developed by Roczen et al. (2014) to explain the pro-environmental conduct of young people. Both models show that knowledge of the environment and a connection to nature are important factors in pro-environmental behaviour. There is a growing recognition in the conservation field that not only is human behaviour a root cause of environmental change but also that behaviour change is critical for achieving environmental outcomes (Cinner 2018, Balmford et al. 2021, Nielsen et al. 2021). Other studies have found that extended time spent in and learning about nature can lead to more pro-environmental behaviours (Collado et al., 2013; Martin et al., 2020). Further, there is evidence that nature experiences that last for several days lead to greater conservation intentions in children (Collado et al., 2013; Stern et al., 2008). Despite a possible effect of duration, many children feel that even with a developed desire to protect the environment they still do not engage in pro-environmental behaviours or feel that if they did it would not make a meaningful difference (Fien et al., 2002).

According to Ari and Yilmaz research , the pro-environmental attitudes of middle school students in Turkey were positively influenced by their environmental awareness, which in turn resulted in positive pro-environmental purchasing behaviour. Lai and Cheng stated that pro-environmental attitudes and willingness to pay for eco-friendly products among undergraduate students in Hong Kong led them to practise green purchase behaviour or pro-environmental behaviour as a way of displaying responsibility towards the environment.

Similarly, Kumar and Ghodeswar found that Indian consumers adopting green lifestyles were encouraged to practise pro-environmental behaviour. Efforts have been made to communicate environmental messages that encourage pro-environmental attitudes, norms and behaviours, but they have not led to individual-level changes quickly enough to make significant reductions in carbon emissions. This indicates a gap between the public's awareness of climate change and the actions needed to address it, which current environmental communication strategies have been unable to close. (Bushell et al., 2015;

Knutti, 2019). To communicate about climate change, information-based strategies are frequently used, but research indicates that they are not very effective in promoting pro-environmental attitudes and behaviour, according to studies by Corner et al. (2012) and Kahan et al. (2012). Researchers have argued that identification with all humanity might be a pathway towards addressing global (and socially unjust) environmental threats such as climate change because people strive for the well-being of their ingroups (e.g., Reese, 2016). Indeed, several prior studies have shown that global identity is positively related to pro-environmental behaviour and policy support (e.g., Joanes, 2019; Loy & Reese, 2019; Loy et al., 2021; Renger & Reese, 2017).

Overall, these studies suggest that having a strong environmental identity is an important factor in promoting pro-environmental behaviour. Encouraging people to connect with nature and feel a sense of connectedness with the natural environment may be an effective way to promote pro-environmental behaviour.

2.2 Environment identity and Climate Change Hope

When individuals feel hope while contemplating a goal, that hope signals that the goal is possible, important, and attainable through personal efforts (Averill, Catlin, & Chon, 2012; Gasper, Spencer, & Middlewood, 2019), thus activating action tendencies (Pekrun & Stephens, 2010) and promoting effort toward one's goal (Roseman, 2011; Snyder, 2002). Given these general effects of hope, several climate change researchers have argued that communicators should seek to instil hope in their audience (e.g., Mann, Hassol, & Toles, 2017; T. A. Myers, Nisbet, Maibach, & Leiserowitz, 2012). Furthermore, perceptions of self- and collective efficacy are related to hope about taking action (Carifio & Rhodes, 2002) and these efficacy perceptions also predict pro-environmental behavioural intentions (Doherty & Webler, 2016; Geiger et al., 2017; Jugert et al., 2016).

Lack of hope may be a significant obstacle to conversation and other types of participation on climate change, particularly for individuals who are already concerned and want to have more regular conversations about the issue (Geiger, Swim, Gasper, Fraser, & Flinner, 2020; Marlon et al., 2019; Norgaard, 2011). Hope can promote active coping in response to challenging circumstances, according to research from the fields of education and health psychology (Snyder et al., 1996; Snyder, Lehman, Kluck, & Monsoon, 2006). However, quantitative and anthropological research (Swim & Fraser, 2014; Norgaard, 2011) shows that many people,

including certified environmental educators, lack optimism towards climate change debates. Hope arises from the idea of an uncertain future, just as dread. Hope, on the other hand, is connected with optimistic aspirations for the future, and its associated motivational function is to be aware of issues and barriers in order to promote goal pursuit (Lazarus, 1991; Ojala, 2017). Hope, also known as "good hope," "authentic hope," or "active hope" (Pihkala, 2017), is an active, motivating force that begins from a point of concern (Li & Monroe, 2019).
Students who believe that society and laypeople have the ability and skills to undertake actions are more likely to be hopeful. This finding shows consistency in a recent study which revealed that skills building combined with a socially supportive setting foster informal science educators' hope and engagement in discourse about climate change (Swim & Fraser, 2013). Young people who are strongly concerned about climate change may also experience a higher degree of hope; perhaps greater concern helps trigger great attention to gaining information and examples and finding strategies to be effective . If educational or outreach programs can increase the students' competence as well as concern level, it is more likely that hopefulness about climate change will increase. Li and Monroe (2019) found that when young people feel concern about environmental problems and believe that they and others can address problems effectively, they are more likely to feel hope. Both hope and concern motivate action, whereas despair and feelings of helplessness are negatively related to action (Ojala, 2012b, 2013; Stevenson, Peterson, & Bondell, 2019; Stevenson & Peterson, 2016). In reflecting on her own work and the work of others, Ojala (2017) observed that young people's responses to global environmental problems are socially embedded and social trust is vital. Young people notice how others react to these problems, and how others respond to their emotions. Adolescents are more likely to express constructive hope regarding climate change when they expect their teachers to respect their emotions and offer support, rather than being dismissive and making fun of their feelings. Reflections by researchers, environmental activists and educators produce converging lists of practices to help young people cope with difficult environmental emotions and conceive hope (Brown, 2016; Chawla, 2020; Hicks, 2014; Monroe, Plate, Oxarart, Bowers, & Chaves, 2017; Ojala, 2017; Sobel, 2008; Trott, 2020; Winograd, 2016).

When adolescents anticipate their professors to respect their emotions and provide support rather than be dismissive and make light of their sentiments, they are more likely to express positive hope towards climate change (Ojala, 2015). When parents and friends provide supportive, problem-solving responses rather than having dismissive or pessimistic voices,

they are more likely to demonstrate both problem-focused and meaning-focused coping (Ojala & Bengtsson, 2018). Involving young people in projects to protect nature in their schools and communities, connecting them with scientists and activists who can share their work and stories, and engaging them through experiential, inquiry-based, and artistic methods are additional crucial steps. Relevant to the current study, people with higher levels of hope are more likely to report being environmentally engaged among adolescent populations (Kerret, Orkibi, & Ronen, 2016; Ojala, 2012, 2015), adults in the US (Bury, Wenzel, & Woodyatt, 2019; Geiger et al., 2020; Marlon et al., 2019; Smith & Leiserowitz, 2014; Swim & Bloodhart, 2015(Ojala, 2015). They are more likely to show both problem-focused and meaning-focused coping when parents and friends respond in solution-oriented and supportive ways, rather than being dismissive or voices of doom-and-gloom (Ojala & Bengtsson, 2018). In Labrador too, Inuit youth valued family, friends and community members who listened sympathetically to their concerns and ideas and supported them in finding new ways to get out on the land as the environment changed (MacDonald et al., 2015).

The belief in a positive future does not always result in personal action, as noted by Chapman et al. (2017) and Hornsey and Fielding (2016). In fact, hope that is based on unrealistic or overly optimistic views of our environmental future can even discourage individuals from taking positive steps, which is sometimes referred to as "shallow" hope, as argued by Ojala (2012). This shallow hope can be seen as a hindrance to environmental action, according to environmentalists such as Kingsnorth (2010) and Mattis (2018). Moreover, hope can be impeded by the conflict between meeting basic needs and engaging in pro-environmental behaviour. For example, individuals facing extreme poverty may have to engage in actions that harm the environment in order to fulfil their basic needs, as discussed by Sandhu and Sandhu (2014) and Weinbaum et al. (2013). As a result, hope may falter when people feel forced to choose between their livelihoods and environmental protection. Nonetheless, hope can be restored when it is linked to behaviours that promote long-term sustainability. Local reforestation initiatives, for example, rely on community members' belief that their efforts will result in positive outcomes for future generations, as suggested by Lawlor et al. (2013)

2.3 Pro Environment Behaviour and Climate Change Hope

Hope is a powerful motivator for effort, goal achievement, and adaptive responses to adversity, according to previous studies in psychology and health (Stotland, 1969; Farran et

al., 1995; Lazarus, 1999; Snyder, 2000; Fritze et al., 2008). According to research on the emotion of hope in relation to climate change (Smith and Leiserowitz, 2014), those who experience more hope are more likely to favour mitigation measures.Ojala (2017) observed that even though the youth in her samples were far more likely to report individual rather than communal activities to solve problems, they still felt motivated when they thought that others could do similar tiny things and that when they all did them, they could collectively make a difference. In this way, societal trust gave purpose to people's behaviours. Direct social support is frequently experienced while working on collective initiatives. Trott (2019) observed 10- to 12-year-olds participating in a 15-week programme to study climate change and develop and carry out family and community-level action plans. They frequently emphasised the importance of this social factor in focus groups. After addressing the municipal council on the local effects of climate change and receiving approval to proceed with a tree-planting initiative, a girl observed that her team felt "you can actually do something instead of ignoring the stuff around us."

The different assessments that people are having about climate change that make them feel optimistic may be a contributing factor to the discrepant results. "Realistic hope" (Hickey, 1986) or "constructive hope" (Ojala, 2012a) refers to the belief that one can overcome challenges and find constructive solutions to problems. Beliefs that people can modify their behaviour or that elected officials will implement climate change legislation are examples of constructive hope. As an alternative, "false hope" or "magic hope" (Schachtel, 1959) is regarded as a coping strategy and refers to the expectation that circumstances would change for the better on their own. False hope is similar to the wishful assumption that climate change is not a major concern or that someone else will solve the issue; such hope is probably counterproductive to the goals of public advocacy on climate issues. According to prior research, having a sense of "false hope" (i.e., believing that climate change will resolve itself) is negatively related to behaviour, while constructive hope appraisals (i.e., maintaining optimism about human capacity to address climate change) are positively related to pro-environmental behaviour (Ojala, 2012a).For instance, Ojala (2008) found no evidence of a link between pro-environmental behaviour and context-specific hope. Hope-related messages were not significantly connected with climate change mitigation efforts, according to Hornsey and Fielding's (2016) analysis. Ojala (2012) used an emotional-cognitive lens to examine hope in order to understand youth environmental engagement. She distinguished between constructive hope (based on positive re-appraisal, trust in societal actors, and

individual efficacy) and denial hope (based on denial of climate change), finding that the former had a positive impact and the latter negatively correlated with engagement. In contrast, higher levels of hope were linked to more pro-environmental behaviours in students in grades 5–6 (Kerret et al., 2020). It's significant that all of the aforementioned studies focused on hope specifically in the setting of environmental behaviours.

Other research (Chadwick, 2010; Feldman and Hart, 2016; Hornsey and Fielding, 2016) have looked at efficacy in connection to hope, investigating, for instance, the effects of positive messaging on political engagement, but their findings were conflicting. Most of these research, but not all of them, uncover beneficial connections. Given the complexity of the world's issues, it can seem impossible for one person to bring about change (Courville and Piper 2004, 40). In these circumstances, hopelessness poses a serious threat. As a result, it is imperative that ecological philosophy address the topic of hope, especially in light of how dependent our current actions will be on future survival and quality of life.

Trott (2020) found that participants in a climate change program repeatedly emphasised the value of group discussions and the act of solving problems collectively, as well as individually, as an important way to cultivate agency. Li and Monroe (2018) attempted to convey the social-trust component of hope to students by incorporating activities that ‘others care’ and ‘others are doing things’ (with others being scientists and landowners) into a forestry-focused curriculum for high school students. Alternative approaches to inspiring trust in the classroom involve enabling in-person interactions between scientists and students (Hallar et al., 2011; Pruneau et al. 2003). According to Moser (2010), successful climate change communication must provide tangible suggestions for action and be empowering (Doherty & Webler, 2016; McNaught et al., 2014; Moser & Boykoff, 2013).
Discussions regarding the potential benefits of hope have been a topic of debate among the conservation biology community, with some researchers arguing for its importance (Lidicker, 2011; Ogden, 2016; Orr, 2004; Patten and Smith-Patten, 2011; Swaisgood and Sheppard, 2011; Swaisgood and Sheppard, 2010). However, there has been a lack of empirical investigation into the role of hope in promoting pro-conservation actions or encouraging conservation workers to persist in the work (Ogden, 2016). Conversely, psychologists have extensively studied the impact of hope and related constructs on motivating personal action to reduce carbon emissions or support pro-climate policies (Chapman et al., 2017; Gifford, 2011; Hornsey and Fielding, 2016; Mossler et al., 2017; Ojala, 2012). In fact, public message

framing that promotes hope about climate solutions has generally been viewed positively (Myers et al., 2012).

Some claim that negative emotions (like fear) about the risks of climate change are more effective motivators because they tend to lead to more systematic information processing about risk (Hart & Feldman, 2014; Mejinders et al., 2001). Guilt, humiliation, anxiety, embarrassment, and demoralisation are other negative feelings that have been utilised to elicit pro-environmental behaviours, guided by negative-state relief theories of pro-environmental behaviour (Apsler, 1975; Carlsmith & Gross, 1969; Cialdini, et al., 1973).Accordingly, fear appeals—messages that emphasise the gravity and salience of threats—such as pictures of the earth on fire—are frequently used in research and practise (Leiserowitz, 2004; Moser, 2010; Nisbet, 2009; Stern, 2012) and have been shown to have a limited impact on behaviour change (Leiserowitz, 2004; Stern, 2012; Van Zomeren et al., 2010; Witte & Allen, 2000). Given that fear prepares the body for immediate action (fight or flight action) and climate change is a long-term, gradual problem, there is disagreement among experts as to whether utilising fear to encourage people to take pro-environmental action is helpful. Communications that are "gloom and doom" have a good possibility of backfiring. (Feinberg & Willer, 2011; Grotzer & Lincoln, 2007; O'Neill & Nicholson-Cole, 2009; Wolf & Moser, 2011). This is due to compelling evidence showing that fear appeals can be ineffective and even backfire if people are not aware of possible solutions to the issue, feel they have little agency or control over it (Witte & Allen, 2000), or do not perceive themselves to be personally at risk (Leiserowitz, 2006; Moser, 2010). Positive appeals also increase the likelihood that people would perceive the issue as moral, which increases their propensity to engage with it and adopt attitudes and behaviours that support efforts to address it (Markowitz & Shariff, 2012; Roeser, 2012). Additionally, social-altruistic motives for pro-environmental behaviour may be stimulated by a communication strategy that is motivated by pleasant emotions rather than negative ones. Such social-altruistic incentives range from the desire to help future generations and engage in collective behaviour generally to the potential moral need to act (Sevillano et al., 2010).

2.4 Narrative analysis in Environment Psychology

Several studies have examined the influence of narratives on pro-environmental attitudes and behavioural intentions. Grace and Kaufman (2013) proposed that additional story

components such as meaning, emotions, and struggles experienced by the main character can be incorporated into story-based narratives to increase their persuasiveness in promoting pro-environmental consumption behaviour. The combination of these components can lead to a process known as narrative transportation, as proposed by Gerrig (1993), where individuals become immersed in the story and may adopt the beliefs and behaviours of the characters in the story.

Narratives that depict personal experiences with climate change can evoke emotional responses that lead to changes in environmental beliefs, risk perceptions, and behaviour (Gustafson et al., 2020; Morris et al., 2019). Different emotions, such as fear, hope, and humour, can be used by communicators to increase the persuasiveness of environmental messages (Chapman et al., 2017; Skurka et al., 2018). Emotions also play a mediating role in the relationship between environmental messages and environmental attitudes and behaviours, such that environmental messages that evoke feelings of hope and fear increase pro-environmental attitudes and advocacy behaviour (Nabi et al., 2018). Pahl and Bauer's study (2013) found that a climate change story related to lower-tier needs improved environmental engagement, but it's possible that empathy (higher-tier) influenced this engagement. Bushell et al. (2017) suggest that there are several narratives aimed at promoting action on climate change, but a more effective approach would be to create a "unifying strategic narrative" that can engage and resonate with different audiences. Similarly, Karhunmaa (2016) describes how different storylines can be used by experts and practitioners to illustrate the potential "co-benefits" of household energy technology projects and how the specific details of these narratives can influence their material impact. Changes in attitudes and behavioural intentions towards climate change may result when the audience for the narrative becomes emotionally invested and begins to share the characters' points of view (Cohen, 2001; Zak, 2015).In order to encourage pro-environmental behaviour, stories rather than just factual information are found to be effective in climate communication (Morris et al., 2019).

CHAPTER 3: RESEARCH GAP AND OBJECTIVES

3.1 Research Gap

This study explores the available evidence on the importance of hope as a mediator among people who are involved in pro-environment behaviour and environmental identityWhile previous studies have examined these variables separately, there is a need to investigate how hope mediates the connection between environmental identity and pro-environmental behaviour. Additionally, the influence of different curricula from university-level courses and the impact of studying pedagogy on enhancing pro-environmental behaviour have not been extensively explored. Understanding how different educational approaches and pedagogical techniques can shape students' environmental attitudes and behaviours is crucial for increasing hope and behaviours.The impact of teachers on their students' understanding, beliefs, attitudes, actions and their sense of responsibility towards the environment is significant, and they have an important role to play in addressing environmental issues (e.g Hungerford 2010; Desjean-Perrotta et al. 2008). Teachers can have a significant impact on promoting environmental protection by leveraging their pedagogical content knowledge and domain knowledge (Shulman 1986), fostering a sustainable worldview, integrating environmental themes across various disciplines in a collaborative learning approach, and empowering students to take specific actions towards environmental protection. Furthermore, the potential of utilising different stories as intrinsic motivational tools in influencing the relationship between environmental identity, hope, and pro-environmental behaviour remains unexplored. Investigating the impact of storytelling on this relationship can provide valuable insights into how narratives can inspire and motivate individuals to engage in environmentally friendly actions. Addressing these research gaps can contribute to the development of targeted educational strategies that foster sustainable behaviours and cultivate a sense of environmental responsibility among individuals.

3.2 Theoretical Framework

SDT (Self-Determination Theory) posits that individuals' self-growth tendency is driven by the fulfilment of their basic psychological needs. This growth tendency is expressed through three manifestations: intrinsic motivation, internalisation, and the adoption of

growth-promoting values (Vansteenkiste, Soenens, & Niemiec, in press). Intrinsic motivation refers to engaging in activities for the inherent enjoyment and satisfaction they provide. Internalisation involves the process of integrating external regulations and values into one's sense of self. Lastly, the adoption of growth-promoting values pertains to pursuing goals that are intrinsically meaningful and aligned with personal development, rather than being driven by external rewards. The growth-oriented nature of intrinsic motivation plays a significant role in the process of identity formation, particularly in two aspects. Firstly, when observing toddlers and adolescents in the midst of searching for a well-fitting identity, it becomes evident that much of their exploratory behaviour is driven by intrinsic motivation. The inherent curiosity and enthusiasm to master new challenges serve as essential motives for exploring the external world and discovering the most intriguing identity options. This perspective aligns with the assertion made by Kashdan and colleagues that the exploration of novel and challenging opportunities is typically fueled by curiosity and intrinsic motivation (Kashdan & Fincham, 2004; Kashdan, Rose, & Fincham, 2004). Van der Weiff et al. (2013) examined the link between environmental self-identity and obligation-based intrinsic motivation. The findings revealed that environmental self-identity influences obligation-based intrinsic motivation, specifically in relation to the intention to use green energy.

A realistic understanding of current threats and a sincere belief that those threats could be mitigated are necessary for hope to be most effective, according to studies (Swaisgood and Sheppard 2010, Hobbs 2013, Hornsey and Fielding 2016, Nabi et al. 2018). Instead of expecting others to take action to lessen the threat, hope motivates people to take action because they believe they can and should do something about it.This, in turn, can influence their attitudes and values towards the environment and their pro-environmental behaviour. The study aims to provide insights into how by increasing environment identity and hope can effectively promote pro-environmental behaviour among students.

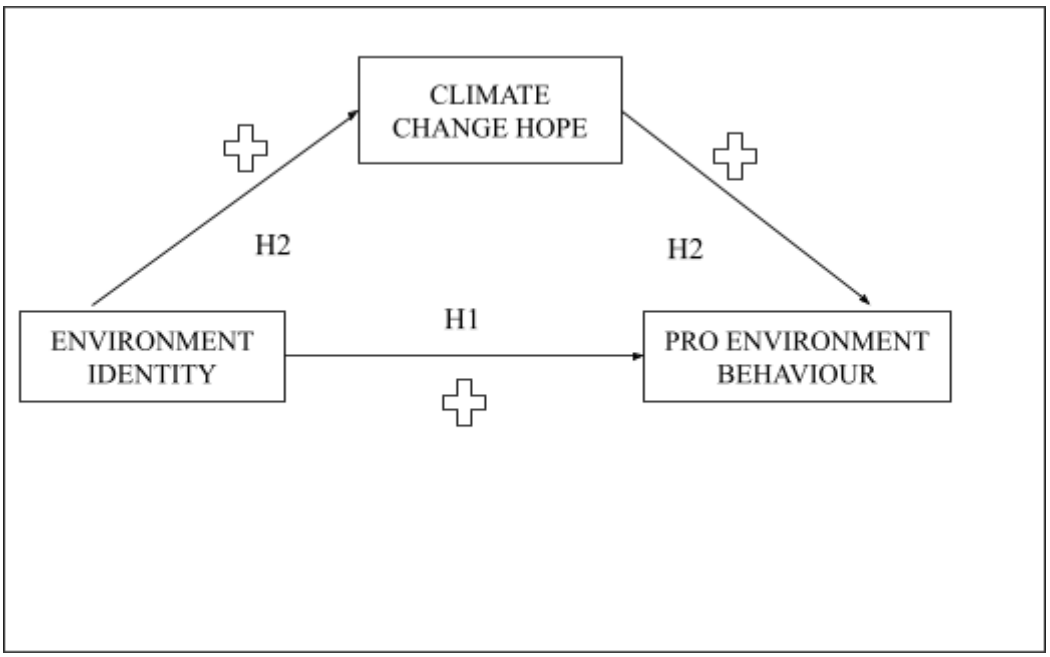

Figure 1 : Conceptual Framework model

3.3 Aim: Mediating effect of Hope on Environment identity and Recurring pro environment behaviour among college students.

3.4 Objectives

1. To determine the relationship between environment identity and pro environment behaviour.

2. To study the mediating effect of climate change hope on environment identity and recurring pro environment behaviour.

Hypothesis

H1: There will be a positive relation between Environment Identity and Pro Environment Behaviour across different environment courses.

H2: Climate Change Hope will mediate Environment Identity and pro Environment Behaviour in environment courses.

3.5 Aim : The purpose of the experiment is to replicate the results from correlational study using a novel methodology of narrative analysis.

3.6 Objectives

Investigate effect varying levels of Environment Identity on Recurring Pro Environment Behaviour through narrative analysis

3.7 Hypothesis

H3: Environment Identity scores will differ across control , intentional and accidental story conditions.

H4: Pro Environment Behaviour and scores will differ across control , intentional and accidental story conditions.

H5: Climate Change Hope scores will differ across control , intentional and accidental story

CHAPTER 4: METHODOLOGY

Study 1: Survey

4.1 Sample

The research sample comprised a total of 476 students, who were enrolled in Thapar university, Patiala .Out of these students, 288 were registered for the first-year engineering program and were required to complete a mandatory credit course called energy and environment (EnE) as a part of their program. Another group of 188 students were pursuing their Masters in Business Administration (MBA) and had to take a mandatory credit course named sustainability in practice (SIP) as part of their curriculum.

4.2 Sample Characteristics

The sample consisted of male and female participants in Thapar University. The age of students ranged between 18-22 years. The first sample for this study consisted of undergraduate students, with a mean age of 21 years (SD = 2.4).The majority of male participants in comparison to females were more (70%). Although no written data was collected, the university is residential and most students opt living on campus. According to their demographic details all students belonged to the upper middle class. The second sample for this study consisted of 188 students, with ages ranging between 20-25 years. The mean age of the participants was M = 22.5 years (SD = 1.58).

4.3 Sample Criteria

In this study study, the aim was to examine the influence of environment identity on pro-environment behaviour with climate change hope serving as a mediator. To conduct the study, the courses related to environment and sustainability offered at Thapar Institute of Engineering and Technology (TIET) were identified from the course catalogue. Everyone had a semester-long environment course in the current degree program offered to first year students. Convenient and purposive sampling was done to choose participants.

Other students were taken from LM Thapar School of Management. At LMTSM, the idea of sustainable management inculcates environmental and ethical awareness, values, attitudes, skills and behaviour needed to be the efficient managers in future.

To provide a detailed understanding of between the two courses, various aspects such as the credit structure, assessment mode, course objectives, course outcomes, pedagogy, and regulatory requirements were examined. The environment course was a 3-credit course that focused on environmental issues, sustainability, and conservation. It had both theory and practical components, with the primary objective of developing students' understanding of the environment and their role in its preservation. Energy and Environment course aims to help students comprehend the vocabulary, meanings, and extent of environmental and energy issues related to the current global situation. Upon finishing the course, students are able to describe the status of natural resources, calculate energy flow and mass balance in ecosystems, evaluate the environmental state of human habitats, and assess the energy performance of systems. The assessment mode for this course involved exams, assignments, and practical work. On the other hand, the sustainability course was a 3-credit course that focused on sustainable development, environmental management, and renewable energy. The course objectives were to develop students' critical thinking, problem-solving, and decision-making skills related to sustainability issues .It believes that sustainable management can instil environmental and ethical awareness, values, attitudes, skills, and behaviour in future managers. The core aspect of this course are the student-driven projects intended to generate a positive impact in the society. Over the course of nearly a year, students work together on a sustainability project, allowing them to improve their critical thinking, communication, time management, and creative problem-solving abilities. This teamwork experience also improves their capacity to function effectively in a group. The SIP program is a comprehensive course that fosters students' critical awareness of the importance of sustainable development and trains them to address any obstacles they may encounter in this pursuit.

4.4 Research Design

In this correlational study, the independent variable is environment identity, and the dependent variable is pro-environmental behaviour, with hope as the mediating variable. An individual's environment identity can be shaped by various factors, including their exposure

to environmental issues and their level of knowledge about the impacts of their actions on the environment.

4.5 Procedure

Data collection started after obtaining an informed consent .The first step was to identify the courses related to the environment and sustainability offered at Thapar Institute of Engineering and Technology (TIET). Once the courses were identified, the faculty was contacted to identify a convenient time and setting to collect data from the students during their class time. The faculty was informed about the purpose of the study, and their response was obtained to ensure agreement with the research goals and procedures. Before beginning with the questionnaires, the instructions were provided to the students. They were: "The current study is based on identity and environmental identity. After understanding what it means you are directed to fill out a questionnaire using a QR code. There are no right or wrong answers. After finishing the questionnaire, a debriefing session was done , during which they were informed that honest responses to the questionnaire would help in determining the course's future trajectory."

Figure 2 : The students fill out the questionnaire in a classroom setting.

4.6 Precautions

1. There was no external disturbance such as anyone entering the premises.
2. Participants were asked to leave the room once they finished. This was done to minimise disturbance.
3. No engagement on phone or any other electronic device was permitted whilst filling up the questionnaire.

4. Participants were encouraged to ask questions to the primary data collector in case of a doubt.
5. Participants were discouraged to talk amongst themselves or engage in discussion while filling up the questionnaire.

Study 2

4.7 Sample

A random sample of 120 participants aged 18-25 years, consisting of both male and female students, was chosen from Thapar University for an experiment. The diverse sample ensured the generalizability of the results, and the random selection eliminated biases.

4.8 Sample Characteristics

The experiment comprised a total of a sample of 120 participants randomly selected from the population of Thapar University, Patiala. The sample consisted of both male and female individuals, with 40 participants in each group distributed randomly. The age range of the participants was between 18 and 25 years, with a mean age of 21.4 years (SD = 1.8).
In terms of educational backgrounds, the majority of the participants were undergraduate students 76.7%.

4.9 Sample Criteria

Two sampling techniques were employed in selecting the participants for the study: purposive sampling and accidental sampling. Purposive sampling was used to include participants who met the criteria of being currently enrolled at Thapar University and falling within the specified age range. Accidental sampling was used to include participants who were randomly encountered on campus or in other public areas, and who met the above criteria.

4.10 Research Design

The research design for this study is a between-subject design. Mayer (2014) argues that stories have a unique ability to capture readers' attention and interest, which in turn can lead

to greater comprehension, collaboration, and motivation to take action. He notes that stories can provide readers with a sense of agency and help them to assume an intentional stance, which allows them to contemplate the mental reasoning and intentions of the characters. This, in turn, can encourage readers to become more engaged in the story and to identify with the characters, leading to greater learning and motivation to take action.

Therefore stimulus (intrinsic motivation) was manipulated with a story. Narrative analysis is an approach to understanding the stories people tell about their lives, experiences, and identities. It involves examining the structure, content, and meaning of these stories, as well as the social and cultural contexts in which they are told. Narrative analysis has been used in a variety of fields, including psychology, sociology, anthropology, and literary studies, to explore questions about identity, power, social change, and the human experience. These studies found that individuals who had a strong sense of environmental identity were more likely to engage in pro-environmental behaviour and to see themselves as part of a broader environmental community and were intrinsically motivated.

Inclusion Criteria

Due to the nature of stories participants selected for this part of the study were very selective. From the group of 288 participants an informal interview was conducted with a group of 20 participants. The purpose of the interview was to determine student's familiarity with westernised lifestyles. Such as preference for food, familiarity with different forms of meat, Netflix popular shows and their viewpoints on live-in relationships. All these elements are embedded in the stories participants were presented with, therefore the interview. Those participants who showed discomfort and uneasiness with the above conditions were not selected. This procedure was repeated with the same pool of participants until the desired sample size was reached.

4.11 Tools Required

The study chose a story as a stimulus based on the assumption that readers may be inspired to form their own beliefs and actions on climate change by identifying with the protagonist in a climate fiction story. Further the form was asked to fill the questionnaire through a QR code.

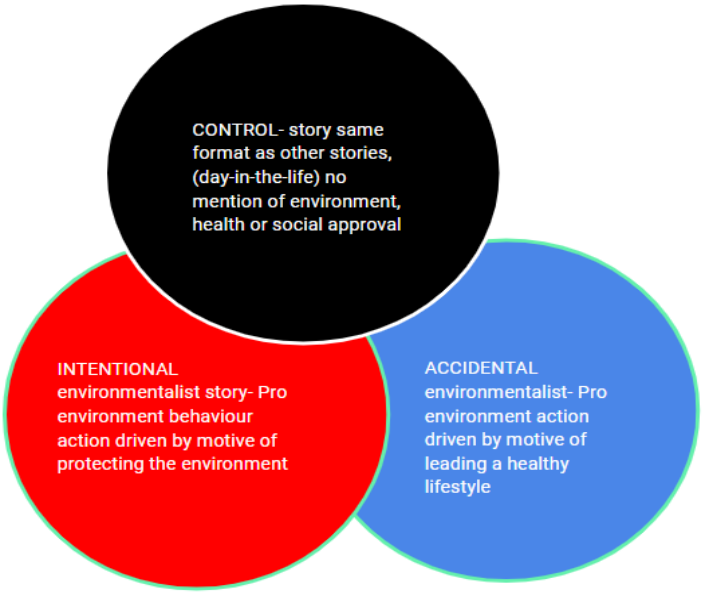

Figure 3- Stories of the experimental study

4.12 Procedure

The participants were selected from Thapar University, Patiala, and invited to take part in the study. The participants were informed about the study's purpose and provided with the necessary instructions. They were given a consent form to sign, indicating that they understood the study's purpose and that their participation was voluntary. The participants were then asked to come to one of the lecture halls at a given time. The researchers used cluster randomization to randomly assign entire groups of participants to the intentional environmentalist, control, and accidental environmentalist conditions. By doing so, the researchers could ensure that all participants within each group received the same treatment/ The researcher provided the following instructions to all participants: "Please read the assigned story carefully and try to understand it. You can be assured that absolute confidentiality will be maintained, and your responses will be used solely for the study and will not be shared with anyone else. After reading the story, you will be given a questionnaire to fill out that assesses your attitudes and behaviours related to environmentalism. The questionnaire will take approximately 20 minutes to complete." Once the participants completed the questionnaire, they were thanked for their participation in the study.

4.13 Precautions

1. Participants were seated in a well lighted quiet room.
2. At a given time a maximum of 25 participants were administered the experiment.
3. The primary researcher ensured participants were not talking among themselves. To do so only two participants were seated in one row.
4. Participants were randomly given either of the one story in no pre-decided order.
5. While filling up the questionnaires participants were specifically instructed to ask any questions if necessary and not to discuss among themselves.

CHAPTER 5 : RESULTS

5.1 Survey Results

Statistical Package for Social Sciences (SPSS) 23 was used to compute descriptive and inferential statistics for the above (Chapter 3) mentioned sample sizes.

Table 1 : Descriptive Statistics for two groups of students

	Mean	S.D	N	Minimum	Maximum	Standard Error
EID-Engineering	5.26	1.05	288	1.00	7.00	0.63
PEB - Engineering	3.23	.485	288	1.19	4.62	0.29
CCH -Engineering	4.86	.925	288	1.00	7.00	0.55

EID- Environment Identity
PEB - Pro Environment Behaviour
CCH- Climate Change Hope

The descriptive statistics for the Engineering department are presented in Table 1. The mean score for environmental identity (EID) was 5.26 (SD = 1.05), for pro environment behaviour (PEB) was 3.23 (SD = 0.485), and for climate change hope (CCH) was 4.86 (SD = 0.925), respectively. These means were based on sample sizes of 288 for the Engineering department. The minimum score for EID was 1.00, the minimum score for PEB was 1.19, and the minimum score for CCH was 1.00, while the maximum score for EID and CCH was 7.00 and for PEB was 4.62. The standard errors for the means were 0.63 for EID, 0.29 for PEB, and 0.55 for CCH.

Table 2 : Correlation Table for Environment identity, Pro Environment Behaviour and Climate Change Hope For Engineering group

		EID	PEB	CCH
EID	Pearson Correlation	1	.470**	.475**
	Sig. (2-tailed)		.000	.000
	N	288	288	288
PEB	Pearson Correlation	.470**	1	.376
	Sig. (2-tailed)	.000		.000
	N	288	288	278
CCH	Pearson Correlation	.475**	.376	1
	Sig. (2-tailed)	.000	.000	
	N	288	288	288

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 displays the results of the correlation analysis between Environment Identity, Pro-Environment Behaviour, and Climate Change Hope. The table shows that there is a significant positive correlation between Environment Identity and both Pro-Environment Behaviour and Climate Change Hope ($r = .47$, $p < .001$). Furthermore, there is a significant positive correlation between Pro-Environment Behaviour and both Environment Identity and Climate Change Hope ($r = .38$, $p < .001$).

Table 3 : Regression Analysis for Engineering group

Model		Unstandardised Coefficients		Standardised Coefficients			
		B	Std. Error	Beta	t	Sig	Adjusted R
1	(Constant)	1.831	.169		10.838	.000	.225
	CCH	.078	.032	.135	2.423	.016	
	EID	.195	.026	.419	7.490	.000	

Dependent Variable : PEB

In Table 3 a regression analysis was conducted to examine the relationship between environment identity, climate change hope, and pro-environment behaviour. Both were statistically significant predictors of pro environment behaviour $F = 41.211$, $p < .001$, accounting for 23.0% of the variance in pro environment behaviour Both environment identity ($b = .195$, $t(275)=7.49$, $p < .001$) and climate change hope ($b = .078$, $t (275) = 2.423$, $p = .016$) were significant predictors of pro environment behaviour. These findings suggest that environment identity and climate change hope are important predictors of positive emotions and well-being among individuals. The coefficient for climate change hope is 0.078, indicating that for every one-unit increase in climate change hope ,pro-environment behaviour is expected to increase by 0.078 units, holding all other variables constant. The coefficient for environment identity is 0.195, indicating that for every one-unit increase in environment identity, pro environment behaviour is expected to increase by 0.195 units, holding all other variables constant. This means that Environment Identity is a stronger predictor of Pro Environment Behaviour than Climate Change Hope.

Table 4 : Mediation Analysis for Engineering group

Relationship	Total effect	Direct effect	Indirect effect	Confidence Interval		t- statistics
				Upper bound	Lower bound	
Environment identity>Pro Environment	0.2120	0.1679	0.0441	.1834	.0267	8.8910

Behavior> Climate
Change Hope

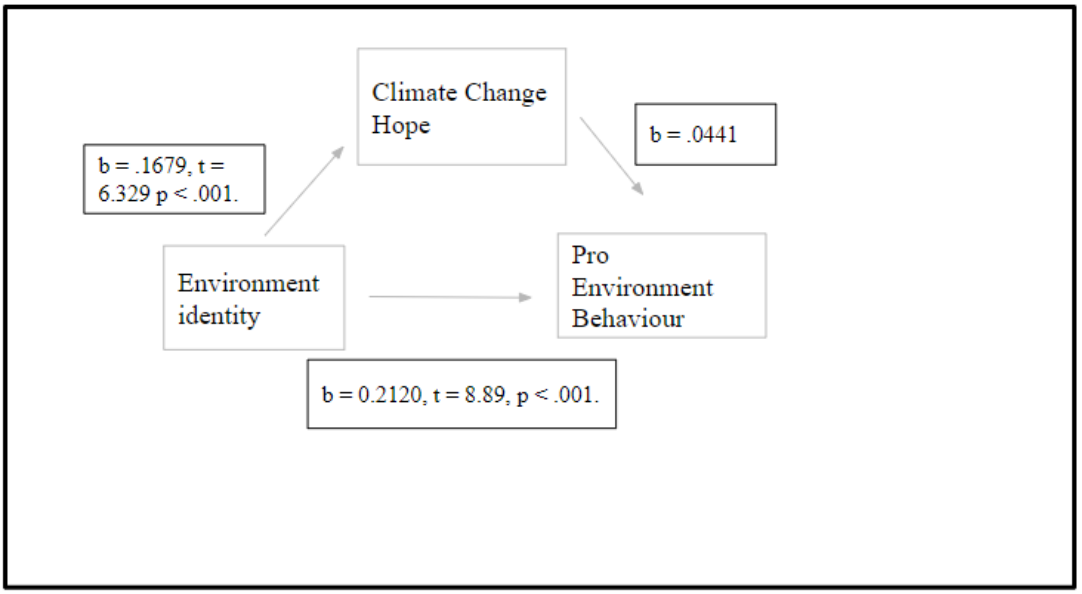

Figure No. 4 - Conceptual Framework

To investigate the mediating role of Climate change Hope (M) in the relationship between Environment Identity (X) and Pro Environment Behaviour (Y), a mediation analysis was conducted using the PROCESS macro for SPSS (Hayes, 2018) and the results are depicted in Table 4. The sample consisted of 278 participants. Based on the data analysed, there is a significant positive total effect of Environment Identity on Pro environment behaviour (b = 0.2120, t(276) = 8.8910, p < .001. The direct effect of Environment Identity on Pro Environment Behaviour is also significant (b = 0.1679 , t(276) = 6.2399, p < .001. The indirect effect of Climate Change Hope in the relationship between Environment Identity and Pro Environment Behaviour is also significant (b = 0.0441). The completely standardised indirect effect is also significant (b =0.0968).These results suggest that Climate Change Hope partially mediates the relationship between environment identity and pro environment behaviour. Overall, these findings provide evidence that both direct and indirect pathways play important roles in the relationship between Environment Identity and Pro Environment Behaviour.

Table 5 : Descriptive Statistics for Management group

	Mean	S.D	N	Minimum	Maximum	Standard Error
EID - Management	5.64	.85	188	2.64	7.00	0.62
PEB- Management	3.23	.429	188	2.14	4.24	0.31
CCH- Management	5.16	.287	188	4.14	5.57	0.20

EID- Environment Identity
PEB - Pro Environment Behaviour
CCH- Climate Change Hope

The descriptive statistics for the Management group are presented in Table 5. The mean score for Environment Identity (EID) was 5.64 (SD = 0.85), for Pro-Environment Behavior (PEB) it was 3.23 (SD = 0.429), and for Climate Change Hope (CCH) it was 5.16 (SD = 0.287). This suggests that, on average, participants in the Management department reported relatively high levels of environmental identity, moderate levels of pro-environmental behaviour, and high levels of climate change hope. The sample size for the Management department was N = 188. The minimum and maximum values in the data set indicate the lowest and highest scores observed, respectively. For instance, in the Management department, the minimum score for Environment Identity (EID) was 2.64, indicating that at least one participant reported very low environmental identity. On the other hand, the maximum score for EID was 7.00, indicating that at least one participant reported very high environmental identity. Similar patterns were observed for Pro-Environment Behavior (PEB) and Climate Change Hope (CCH), with minimum scores of 2.14 and 4.14, and maximum scores of 4.24 and 5.57, respectively.

Table 6 : Correlation Table for Environment identity, Pro Environment Behaviour and Climate Change Hope For Management group

	EID	PEB	CCH
EID Pearson Correlation	1	.436**	.-.062
Sig. (2-tailed)		.000	.401
N	188	188	188
PEB Pearson Correlation	.436**	1	-.068
Sig. (2-tailed)	.000		.354
N	188	188	188
CCH Pearson Correlation	-.062	-.068	1
Sig. (2-tailed)	.401	.354	
N	188	188	188

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 6 a Pearson product moment correlation analysis was conducted to examine the relationships among environmental identity (EID), pro-environment behaviour (PEB), and climate change hope (CCH) in the sample. The correlation matrix showed that EID was significantly and positively correlated with PEB ($r = .436$, $p < .001$), indicating that individuals with higher levels of environmental identity tended to engage in more pro-environmental behaviours. However, there was no significant correlation between EID and CCH ($r = -.062$, $p = .401$) or between PEB and CCH ($r = -.068$, $p = .354$), suggesting that the relationship between environment identity and pro-environmental behaviour was not mediated by climate change hope. These findings suggest that environment identity and pro-environmental behaviour are positively related, but climate change hope may not play a mediating role in this relationship.

Table 7 : Regression Analysis for Management group

	Unstandardised Coefficients	Standardised Coefficients

Model		B	Std. Error	Beta	t	Sig	Adjusted R
1	(Constant)	2.588	.539		.4805	.000	.188
	EID	.216	.033	.430	6.505	.000	
	CCH	-.116	.099	-.078	-1.176	.241	

Dependent Variable : PEB

Table 7 shows that the regression coefficient for Environment identity is positive and significant (B = .216, SE = .033, t(185) = 6.505, p < .001), indicating that there is a positive linear relationship between Environment identity and Pro environment behaviour. However, the regression coefficient for hope is negative and not significant (B = -.116, SE = .099, t(185) = -1.176, p = .241), suggesting that there is no significant relationship between hope and PEB after controlling for the effects of the other variable. The adjusted R^2 value of .188 indicates that the model accounts for 18.8% of the variance in PEB after controlling for the effects of the other variable. These results suggest that Environment Identity is a significant predictor of PEB compared to Climate Change Hope .

Table 8 : Mediation analysis of Management students

Relationship	Total effect	Direct effect	Indirect effect	Confidence Interval		t- statistics
				Upper bound	Lower bound	
Environment identity>Pro Environment Behavior> Climate Change Hope	.2015	.2016	-.0001	0.0186	-0.0112	5.7362

Table 8 shows the mediation analysis conducted to examine the relationship between pro-environment behaviour (PEB) and environment identity (EID) through the mediator of climate change hope (CCH) for the management students. The total effect of X on Y was significant (B = .2015, SE = .0351, t = 5.7362, p < .001. This suggests that X has a direct

effect on Y. The direct effect of X on Y remained significant after accounting for the mediator (B = .2016, SE = .0352, t = 5.7189, p < .001. This indicates that X has a direct effect on Y independent of the mediator. The completely standardised indirect effect of X on Y through the mediator M (CCH) was not significant (B = -.0001, SE = .0069). This suggests that the indirect effect of X on Y through M is not statistically significant. In conclusion, the results indicate a significant total effect and direct effect of X on Y. However, the mediation analysis did not reveal a significant indirect effect of X on Y through the mediator M (CCH).

5.2 Narrative Analysis

Table 9 : Descriptive statistics for Narrative study

	N	Mean	S.D	Minimum	Maximum
EID control	40	5.14	.821	3.71	6.57
accidental		6.28	.499	5.00	6.93
intentional		5.53	.813	3.43	6.71
PEB control	40	3.53	.557	2.86	5.38
accidental		5.26	.945	2.57	6.71
intentional		4.64	.992	2.95	6.48
CCH control	40	4.56	.835	2.64	6.46
accidental		6.16	.512	5.09	7.00
intentional		4.96	.687	3.46	7.00

Table 9 shows descriptive statistics were calculated for the three groups: Environment Identity, Pro Environment Behaviour, and Climate Change Hope. For the Environment Identity group, the mean scores were 5.14 (SD=0.821) for the control condition, 6.28 (SD=.499) for the accidental condition, and 5.53 (SD=0.81) for the intentional condition. For the Pro Environment Behaviour group, the mean scores were 3.53 (SD=0.55) for the control

condition, 5.26 (SD=0.94) for the accidental condition, and 4.64 (SD=0.99) for the intentional condition. Lastly, for the CCH group, the mean scores were 4.56 (SD=0.83) for the control condition, 6.16 (SD=0.51) for the accidental condition, and 4.96 (SD=0.68) for the intentional condition.

Table 10 : ANOVA summary table

		Sum of Squares	df	Mean Square	F	Sig.
Environment Identity	Between Groups	26.784	2	13.392	25.33	.000
	Within Groups	61.854	177	.529		
	Total	88.638	119			
Pro Environment Behavior	Between Groups	61.323	2	30.66	42.00	.000
	Within Groups	85.411	177	.730		
	Total	146.733	119			
Climate change hope	Between Groups	55.926	2	27.963	58.45	.000
	Within Groups	55.969	177	.478		
	Total	111.895	119			

In Table 10 a one-way ANOVA was conducted to examine the differences in Environment Identity, Pro Environment Behaviour, and Climate Change Hope across three groups (control, accidental, intentional). For the variable Environment Identity, there was a significant effect on the scores ($F(2, 177) = 25.33$, $p < .001$). Similarly, for the variable Pro Environment Behavior, there was a significant effect on the scores ($F(2, 177) = 42.00$, $p <$

.001). Lastly, for the variable Climate Change Hope, there was a significant effect on the scores ($F(2, 177) = 58.45$, $p < .001$).

Table 11 : Post Hoc Tests

Dependent variable	(I) Groups	(J) Groups	Mean Differences (I-J)	Sig..
EID				
	Control	Accidental	-1.13743*	.000
		Intentional	-.318403	.051
	Accidental	Control	1.13743*	.000
		Intentional	.75340*	.000
	Intentional	Control	.38403	.051
		Accidental	-.75340*	.000
PEB	Control	Accidental	1.72743*	.000
		Intentional	-1.11190*	.000
	Accidental	Control	-1.72743*	.000
		Intentional	-.61553*	.000
	Intentional	Control	1.11190*	.000
		Accidental	-.61553	.005
CCH	Control	Accidental	-1.60677*	.000
		Intentional	-.40222*	.028
	Accidental	Control	1.60677*	.000
		Intentional	1.20455*	.000
	Intentional	Control	.40222*	.028
		Accidental	.-1.20455*	.000

*. The mean difference is significant at the 0.05 level.

Table 11 presents the results of Tukey's post hoc tests conducted to examine the mean differences between groups for three dependent variables: Environment Identity (EID), Pro Environment Behavior (PEB), and Climate Change Hope (CCH). For the variable EID, post hoc comparisons revealed significant mean differences between the Control and Accidental groups ($p = .000$), the Control and Intentional groups ($p = .000$), and the Accidental and Intentional groups ($p = .000$). No significant mean difference was found between the Control

and Accidental groups (p = .051) or the Control and Intentional groups (p = .000). For the variable PEB, post hoc comparisons indicated a significant mean difference between the Control and Intentional groups (p = .000). No significant mean differences were found between the Control and Accidental groups (p = .051) or the Accidental and Intentional groups (p = .000). For the variable CCH, post hoc comparisons revealed significant mean differences between the Control and Intentional groups (p = .000) and the Accidental and Intentional groups (p = .000). No significant mean difference was found between the Control and Accidental groups (p = .028).

In summary, the post hoc tests showed significant mean differences between various groups for the variables EID, PEB, and CCH, indicating distinct patterns and levels of these variables among the different groups.

CHAPTER 6: DISCUSSION

The aim of this project was to investigate the role of climate change hope in the relationship between Environment Identity and Pro Environment Behaviour. The choice of climate change hope as a mediator variable was based on previous research which suggested that hope can be a powerful motivator for pro-environmental behaviour (Milfont & Sibley, 2014). Two different sets of students were taken from the same institution teaching environment with different curriculums and pedagogy. Another aim was to see doing an experiment to replicate the results from correlational study using a novel methodology of narrative analysis.

The post hoc tests revealed significant mean differences for the EID, PEB, and CCH variables. These findings highlight the importance of considering group differences when examining environment identity, pro-environment behaviour, and climate change hope. For EID, the Accidental group scored lower than the Control group, while the Intentional group scored higher than the Control group. This suggests that individuals who were intentionally engaged in nature-protective behaviour had a stronger environment identity as compared to those in the Control and Accidental groups. In PEB, there are significant differences between the Control and Accidental groups, Control and Intentional groups, and Accidental and Intentional groups. In CCH , there are significant differences between the Control and Accidental groups, Control and Intentional groups, and Accidental and Intentional groups
Possible reasons for these differences may include varying experimental conditions, individual motivations, previous experiences in natural settings, and personal values related to environmental protection.

Educational institutions are a vital component in developing a generation that is committed to safeguarding and conserving the environment. The approach to achieving this objective varies across countries and educational levels with regard to imparting environmental knowledge, fostering sustainable behaviour, and promoting environmental engagement . According to various studies, higher education institutions have a significant role in cultivating environmental awareness and promoting caring for the environment (Emiru and Waktola, 2018; Tlebere et al., 2019). Environmental education offered in colleges or universities can increase students' awareness and understanding of environmental issues (Baltazar et al., 2016). In Indonesia, policies such as environmental education and disaster

education have been implemented in the form of courses (Ikhsan et al., 2019; Nomura, 2009; Parker and Prabawa-Sear, 2019; Prihantoro, 2014; Dwiningrum, 2004; Rizal, 2017; Suckale et al., 2018).

Environmental education has been defined as an education that encourages responsible behaviour and provides opportunities for students to acquire the knowledge, attitudes, values, commitments, and skills needed to solve environmental problems. Environmental education has been incorporated into educational policies for both schools and universities, as evidenced by several studies (Nomura, 2009; Nurwidodo et al., 2020; Prabawa-Sear, 2018; Tanu and Parker, 2018; Ikhsan et al., 2019; Novawan and Aisyiyah, 2020; Prihantoro, 2014). This is based on principles that include the development of knowledge, skills, attitudes, and behaviour, with a focus on developing a caring attitude, curiosity, and concern for the environment. These principles have been proposed by various scholars and organisations, such as Howe and Disinger (1991), Hungerford and Volk (1990), Uzzell (1999), and the Department of Education and Science (1988).

H1: There will be a positive relation between Environment Identity and Pro Environment Behaviour across different environment courses. This hypothesis was accepted and is also supported by social identity theory, which suggests that individuals are more likely to act in ways that are consistent with their group identity (Tajfel & Turner, 1986). This is based on a previous study by Leong and colleagues (2019), which found that environmental education programs can increase individuals' sense of identity with the environment and promote pro-environmental behaviour. Specifically, they found that individuals who participated in an environmental education program reported higher levels of environmental identity and engaged in more pro-environmental behaviours compared to individuals who did not participate in the program. This study highlights the potential of educational interventions to promote pro-environmental behaviour by enhancing individuals' sense of identity with the environment. The results support the hypothesis and the findings are consistent with previous research. Yusliza et al. (2020) investigated pro-environmental behaviour and sustainable development in Malaysia and said that colleges, universities, and training centres play an important role in promoting pro-environmental behaviour among young generations. Zsóka et al. (2013) found that the level of environmental education had a significant impact on students' knowledge, particularly in university settings. Blok et al. (2015) demonstrated that pro-environmental behaviour in the workplace is strongly influenced by a green university

environment. Vicente-Molina et al. (2013) identified student motivation and the effectiveness of environmental education programs as critical factors that significantly influence pro-environmental behaviour. Cleverdon et al. (2017) observed that the engagement of students and other stakeholders is crucial for promoting long-lasting behavioural changes towards environmental sustainability, as demonstrated by a large recycling project in a UK university. Theoretical models such as the pro-environmental behaviour model can be used to analyse high school students' behaviour and evaluate educational interventions (De Leeuw et al., 2015; Karimi et al., 2021).

Therefore, in order to achieve sustainability goals, it is important to encourage pro-environmental behaviour from a young age. This is because students will be exposed to the impacts of environmental issues in the future and can stimulate environmental efforts.

H2: Climate Change Hope will mediate Environment Identity and pro Environment Behaviour in environment courses. This is where the concept of Climate Change Hope comes in, as it represents the belief that individuals can make a positive difference in addressing climate change through their actions (van der Linden et al., 2019). By providing a sense of agency and empowerment, Climate Change Hope may act as a mediator between Environment Identity and pro-Environment Behaviour, encouraging individuals to translate their identity into concrete actions that benefit the environment.This finding is consistent with theoretical viewpoints on when and how hope could spur action on significant, widespread social problems like climate change. According to Geiger and colleagues (2020), depending on the target of the hope, the impacts of hope on encouraging goal-directed behaviour with regard to climate change may vary.

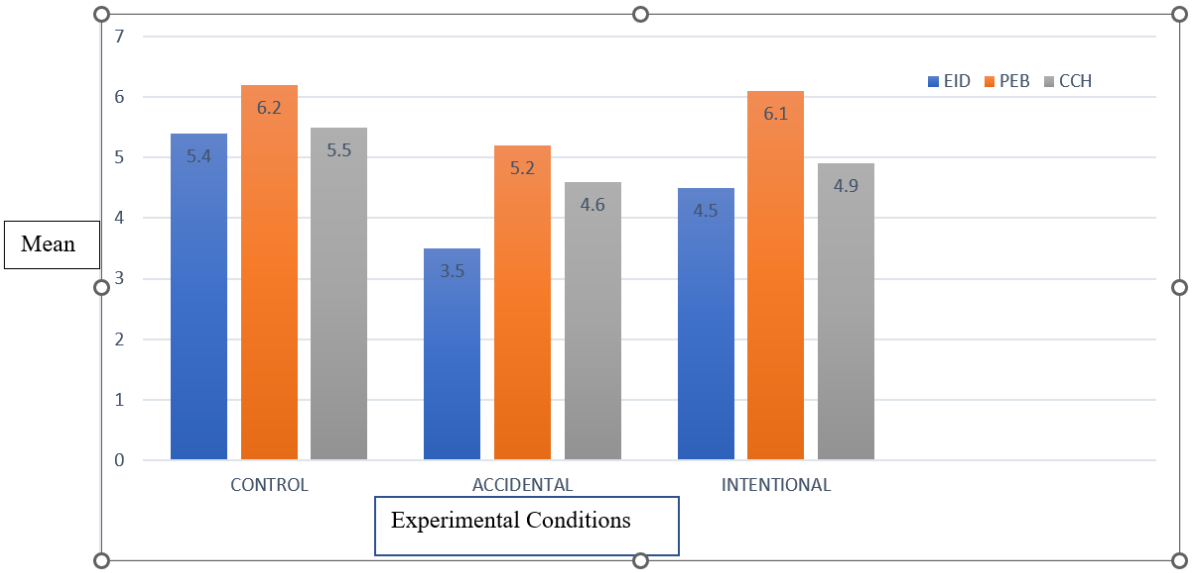

Figure 5 : Showing Mean values of the three conditions

H3: Environment Identity scores will differ across control , intentional and accidental story conditions. This hypothesis is formulated based on the expectation that different story conditions will elicit different levels of Environment Identity in participants, as the stories may influence their perception of personal responsibility towards environmental issues. By testing this hypothesis, researchers can gain insights into the effectiveness of different storytelling approaches in promoting pro-environmental behaviour. Overall, the results suggest that there were significant differences in Environment identity scores across the different story conditions. Specifically, the mean difference between the Control and Intentional groups was -1.13743 ($p < .001$), indicating a substantial difference in the environment identity scores between these two groups. Similarly, the mean difference between the Accidental and Intentional groups was 1.13743 ($p < .001$), suggesting a significant variation in the environment identity scores between these groups as well. These findings indicate that the individuals in the Intentional group had significantly different environment identity scores compared to the Control and Accidental groups.

In the context of the environment, intrinsic motivation refers to an individual's inherent tendency to engage in pro-environmental behaviour out of their genuine affection for the environment (Silvi & Rosa, 2017; Ali et al., 2020; Ojo, 2021). This motivation comes from within and is not dependent on external rewards (Budzanowska-Drzewiecka & Tutko, 2021). Enjoyment-based intrinsic motivation reflects the pleasure individuals experience when engaging in pro-environmental behaviour (Taufik et al., 2014).

Overall, the results suggest that different story conditions can have a significant impact on individuals' Environment Identity scores. These findings can have important implications for the design of environmental education programs and campaigns, as they highlight the importance of using storytelling techniques to engage individuals and promote pro-environmental behaviour.

H4: Pro Environment Behaviour and scores will differ across control , intentional and accidental story conditions. Specifically, it was hypothesised that exposure to environmental stories would increase pro-environmental behaviour and that intentional and accidental story conditions would differ in their effects on pro-environmental behaviour and scores, as intentional stories may be perceived as more persuasive and motivating compared to accidental stories. Overall, this hypothesis aimed to investigate the potential of storytelling as a tool for promoting pro-environmental behaviour and attitudes.The mean difference between the Control and Intentional groups was -0.318403 ($p = .051$), suggesting a marginally significant difference in pro-environment behaviour scores between these groups. However, no other significant mean differences were observed for PEB. These results indicate that individuals in the Intentional group may exhibit slightly different pro-environment behaviour compared to the Control group, but further research is needed to confirm these findings

Overall, these findings partially support H4, as there was a significant difference in pro-environmental behaviour between the control and accidental conditions, but not between the intentional and control/accidental conditions. Recent research in environmental education has shown an increased interest in the use of narrative methods. According to a study on climate change (Morris et al., 2019), narratives that follow a story structure can enhance personal experiences and emotional engagement, thereby promoting pro-environmental behaviour. Morris et al. (2019) conducted a study to examine the relationship between narrative transportation, climate change, and pro-environmental behaviour. They hypothesised that presenting information about climate change in the form of a story would lead to higher levels of pro-environmental behaviour compared to presenting the same information in an informational text. This suggests that informational texts may not only be less effective but could also be detrimental in promoting pro-environmental behaviour. Such narratives can help learners better understand, become more interested in, and engage with the subject matter(Morgan, M.S. 2017). Additionally, they have been found to trigger

emotions and have a deeper impact on learners' cognition and behaviour (Gerrig, R.J. (2018),Oatley, K. (1999).). Moreover, autobiographical memories that resonate with the story's theme may be activated, affecting past concepts (Mar, R.A. 2004). Thus, narrative can be viewed as a process of constructing new knowledge and experiences in a more accessible way, where researchers can use various genres or tools, such as case studies, biographies, audio, video, and stage performances, to effectively communicate messages and promote behavioural changes. The development of pro-environmental behaviour also takes time and requires first-hand experiences. The theory of embodied cognition suggests that learning in real-life situations is more effective than learning through abstract knowledge. According to reinforcement theory, when positive reinforcement is not present, children's pro-environmental behaviour can decrease or disappear. Johnson (2011) pointed out that a character's portrayal of prosocial behaviour in a story could have influenced the participants' engagement in such behaviour in real life . This implies that narratives that elicit strong emotional engagement, coupled with the portrayal of specific behaviours, may have actual consequences in terms of modifying behaviour. Grace and Kaufman (2013) suggested that narratives that are story-based and describe a protagonist who confronts an environmental challenge may have a stronger impact on attitudes and beliefs compared to messages based solely on facts.

According to earlier studies, reading a protagonist's confrontation with an environmental problem can encourage people to become more concerned about climate change. According to Gustafson et al. (2020), listening to a radio story about someone's first hand encounter with the effects of climate change in their immediate environment had a positive impact on beliefs and perceptions of the risk associated with global warming by evoking emotional responses to the story. In a study by Grace and Kaufman (2013), agricultural students were exposed to either a fact-based narrative on sustainable agricultural practices or a story-based narrative about a person's personal encounter with sustainable agricultural practices in a farm. Regardless of the medium of narrative delivery, students who were exposed to a tale about a person's personal experience with farming practices exhibited more favourable attitude changes towards sustainable farming practices than those exposed to a fact-based narrative on the same problem. While previous research has shown that stories can promote climate change awareness by evoking changes in environmental beliefs, attitudes, and emotions, there is little proof that stories can actually change behaviour. It is worth noting that most studies using narrative-based interventions to communicate environmental issues focus on the

antecedents of behaviour, such as attitudes and intentions, as the outcomes of interest.One example of a study that compared fact-based and story-based narratives in relation to pro-environmental behaviour is the research conducted by Bohner and colleagues (2014). In their study, they examined the impact of different narrative formats on individuals' willingness to engage in pro-environmental behaviour, specifically water conservation.The researchers presented participants with either a fact-based narrative that provided information about the importance of water conservation and its impact on the environment, or a story-based narrative that depicted a relatable character's personal experiences and emotional journey towards adopting water conservation practices. After exposure to the narratives, participants' intentions and behaviours related to water conservation were assessed. The findings of the study revealed that participants who were exposed to the story-based narrative showed higher intentions to engage in water conservation behaviour compared to those who received the fact-based narrative.

H5: Climate Change Hope scores will differ across control , intentional and accidental story conditions. This was done to determine if the narratives presented in the different story conditions could influence individuals' emotional response and their perception of the possibility of positive change in regards to climate change. The mean difference between the Control and Intentional groups was 0.75340 ($p < .001$), indicating a substantial difference in climate change hope scores between these groups. Additionally, the mean difference between the Accidental and Intentional groups was -0.75340 ($p < .001$), suggesting a significant variation in climate change hope scores between these groups as well. These findings suggest that individuals in the Intentional group had significantly different levels of climate change hope compared to the Control and Accidental groups.

Morris et al. hypothesised that in terms of discussions about climate change, narratives send visual and auditory information to the brain, and the narrative content can facilitate experiential processing, making people empathise with the story and inducing the brain to send action commands that prompt pro-environmental behaviour. Fictional stories about climate change can be seen as a way to warn readers about the potential consequences of not taking action to prevent a catastrophic future. They can also help readers imagine and understand future scenarios that are beyond their current experiences. According to O'Neill (2018), such stories can serve as a mental exercise similar to the modelling experiments done by environmental scientists to project future scenarios. This allows readers to consider

potential future scenarios that may not be easily measured or observed in the present. Interdisciplinary research suggests that stories and narratives may be more effective than fact-based narratives for climate change communication and promoting social change (Bushell et al., 2017; Gearty, 2015; McComas & Shanahan, 1999; Moezzi et al., 2017). This is because narrative structures help to establish a cause-and-effect relationship between the information presented, which makes them inherently persuasive (Curtis, 1994; Dahlstrom, 2010). Using narrative structures in climate change messaging provides communication campaigns with a unique opportunity to effectively influence public perceptions and actions by situating the major actors, events, and factors related to the environmental issues of interest (Fløttum & Gjerstad, 2017). Stories can boost emotional engagement and lessen the psychological distance associated with climate change in the context of climate change communication (Van der Linden et al., 2015; Van Boven et al., 2010). Because of this, processing stories through narrative conveyance may endow environmental messages with persuasive abilities, making story-based narratives more effective in motivating pro-environmental behaviour change than analytic and fact-based narratives. The study conducted by Grace and Kaufman (2013) indicated that individuals who were receptive to learning about climate change demonstrated comparable levels of attitude change after being exposed to either fact-based or story-based narratives. However, individuals who were initially resistant to climate change were more likely to experience changes in their attitudes after exposure to story-based narratives. It is possible that these results may be influenced by participants' pre-existing attitudes towards climate change.

CHAPTER 7: CONCLUSIONS AND FUTURE DIRECTIONS

7.1 Conclusion

The International Union for Conservation of Nature (IUCN) recommended in 1972 that environmental education should include various teaching methods such as storytelling, problem analysis, role-playing, simulation games, experiments, field observations, and instant associations. Previous research has demonstrated that the use of role-playing, games, and dramas in environmental education can enhance environmental knowledge, attitudes, and behaviours among elementary and secondary school students. Moreover, many countries globally have utilised different forms of media, including television, video, radio, and technology exhibitions, to raise students' awareness of environmental issues and develop their environmental protection skills.

Because print narratives do not restrict readers' choices like video narratives do,this medium might have a more persuasive effect because of processing time. McLaughlin and Velez (2017) state that the indefinite amount of time to comprehend the narrative and the absence of Readers may need to actively construct their own imaginations of the story in order to follow vivid clues.Because more time allows for more thorough information processing, the imagery created through print could be just as powerful as the one created through video (Shen et al., 2015). This can lead to a longer-lasting and more distinctive mental image (Green, 2008) to develop his own mental image, a reader must be capable and motivated.

Further research is necessary to better understand the complex interplay between these factors and their impact on hope and environmental behaviour. Studies in environmental psychology and communication indicate that people may react negatively to efforts aimed at motivating pro-environmental behaviour and mitigating climate change effects, regardless of their level of scientific knowledge, concern, or the amount of factual information they receive. Colleges, universities, and training centres play a critical role in promoting pro-environmental behaviour among young generations, as individual behavioural change is easier to foster at this stage (Massaro 2018, Ting 2016). Organisations are also interested in promoting pro-environmental shifts due to their sustainability goals and the implications towards student

enrolment (Meyer 2016). To achieve this, several studies have explored different aspects of students' pro-environmental behaviour, such as food-related environmental beliefs and behaviours (Arvai 2015), electronic environmental knowledge, students' intention and loyalty towards green products , gender differences in pro-environmental behaviour , and even the use of emoticons to encourage recycling among students (Meng 2017).

By using narrative-based education instead of traditional methods, students' comprehension of environmental knowledge is deepened, and their attention to environmental issues is heightened. As a result, this type of education is beneficial for fostering a connection between nature, teaching them to cherish and protect the environment. Since behavioural change takes time, it is recommended that narrative-based environmental education be integrated into the course curriculums and extracurricular activities to cultivate pro-environmental intentions. Stimulating students' emotions towards the natural environment can be done through various means, such as storytelling, experiential learning, and immersive educational experiences. These methods can evoke emotions such as awe, wonder, and empathy towards the natural world, which can lead to a positive relationship with it. Additionally, providing opportunities for students to engage in hands-on activities that promote environmental stewardship, such as gardening or habitat restoration, can also help to foster a sense of connection and responsibility towards the environment. Through these experiences, students can develop sustainable behavioural habits, such as reducing their waste, conserving resources, and choosing eco-friendly products.

7.2 Limitations and Future Directions

There are some limitations to this study, first, a correlational design was employed in this investigation. Second, the study sample has a constraint on how broadly the results can be applied because the subjects were all from the same university, Thapar University. Future researchers might use a longitudinal research design and draw people from other universities and geographical areas. Third, this study has employed convenience sampling, thus the limitations of this method are also implied, and should be taken into account while replicating this study. The survey questions may not account for the cultural diversity and variations in Indian dietary habits, driving patterns, and consumer choices. Although the variables included in the framework are suitable for studying pro-environmental behaviour, it is possible that additional variables could also contribute to the framework. It may be worthwhile to investigate the possible connections between the line of sustainability and to

include constructs such as environmental attitude (individual's positive or negative evaluation of the environment and their motivation to engage in pro-environmental behaviour), environmental knowledge and concern (individuals' understanding of environmental issues and their concern for the environment), awareness (individuals' attention to and perception of the environment, including its current state and potential threats), green mindfulness (individuals' ability to be present in the moment and focused on the environment, which can lead to greater engagement with sustainability initiatives), green climate (organisational culture and values that promote sustainability, which can influence individuals' behaviour.) By studying these mediators, researchers can better understand the complex relationships between sustainability initiatives and individuals' behaviour and engagement with the environment.

Finally, this study has not monitored the behaviours, which are of full knowledge to the respondents, and therefore future research can use panel or scanner behaviour data to counter the erroneous assumption of behaviours following intention.. A control group, or a similar group of participants who completed the same surveys at the same times but did not take part in the experiment of narrative analysis, is missing from the study, for one. Stern (2000) contends that the key to mediating the link between environmental identity and behaviours is a person's perception of their own capacity for action, or agency. Future studies should therefore examine the part that students' feeling of agency plays and whether it helps to close the gap between intentions and deeds in favour of the environment.

The limitations of the study also include biases such as the tendency of participants to provide socially desirable responses, errors in memory recall, and individual subjectivity, which may affect the accuracy of the results in the experiment The participants may have responded in a socially desirable manner after reading the story and fact-based narratives, and their responses to the post-test questionnaire may have been affected by memory inaccuracies. To address this issue, participants were not informed in advance about the content of the questionnaire that would measure their consumption behaviour . One limitation of both the current study and past research on narrative analysis is the lack of consideration given to individuals as active participants in creating and telling their own stories about climate change. Most environmental messaging aims to induce emotional and behavioural responses, rather than encourage individuals to reflect on their own experiences with climate change. Therefore, there is a need for further research on the influence of individuals'

storytelling on their subsequent pro-environmental behaviour, particularly in the fields of social and environmental psychology.

Future studies should look into other factors that influence how pro-environmental behaviour is exhibited by university students. Future studies are also required to determine how to improve university students' pro-environmental behaviour in light of the discovered predictive variables, ultimately improving the sustainability of their quality of life. More relevant variables like self identity; environmental locus of control can be added to test model's sufficiency in predicting pro environment behaviour. Future studies in this field should employ a longitudinal study design that takes into account the type of activity and measures the length and frequency of activity in order to get around these constraints. Using this information, it establishes what kind of activity encourages the strongest connection to nature or more pro-environmental behaviours and how frequently students should engage in nature-based activities to achieve these goals. In the future, when using the narrative approach in education, it is worth exploring other media forms, such as audio and drama plays, to determine if there is a more effective medium for imparting knowledge. Additionally, it would be interesting to discuss narrative thinking and empirical thinking, which are based on knowledge and experience, and principles and logic, respectively. It would be valuable to investigate how to effectively teach scientific knowledge through narrative methods. Future studies should investigate whether children's increased environmental awareness resulting from narrative-based education can influence their parents' environmental awareness and behaviour. It is also suggested to consider the environmental values of teachers in the research. Additionally, it would be useful to compare the effectiveness of one-to-one parent-child interactive education with one-to-many teacher-student interactive education models.

The integration of personal and community climate change experiences and responses with scientific facts in reporting has the potential to broaden the reach of environmental messaging and increase public reception. Further research is necessary to explore this area.

7.3 Implications

This study emphasises the importance of different environment courses that sought to evaluate and monitor the impacts of students on the environment, in order to achieve environmental sustainability goals. Apex management should understand the significance of

implementing students' environmental know-how assessments that can be evaluated by lecturers. The implementation of effective monitoring and evaluation processes to assess the effectiveness of environmental education can provide hope for mitigating the impacts of climate change. As Vicente-Molina (2013) suggests, introducing environmentally related subjects and activities in educational institutions can be crucial for promoting environmental behaviour among students. This can help shape positive attitudes and behaviours towards the environment, leading to a more sustainable future. Additionally, research indicates that emotional orientation towards environmental issues is a key predictor of environmental behaviour (Kollmuss & Agyeman, 2002). Therefore, by focusing on emotional orientation rather than cognitive orientation, educational institutions can help students develop a deeper understanding of the environmental system and take positive actions to reduce their environmental impact, thus providing hope for a more sustainable future.

References

1. Arnold, C. (2017). Using Storytelling to Promote Pro-environmental Behaviour in Cornish Businesses (Doctoral dissertation, University of the Arts London in collaboration with Falmouth University).
2. Aziz, F., Md Rami, A. A., Zaremohzzabieh, Z., & Ahrari, S. (2021). Effects of emotions and ethics on pro-environmental behaviour of university employees: a model based on the theory of planned behaviour. Sustainability, 13(13), 7062.
3. Ballantyne, R., & Packer, J. (2009). Introducing a fifth pedagogy: Experience‐based strategies for facilitating learning in natural environments. Environmental education research, 15(2), 243-262.
4. Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of environmental psychology*, 27(1), 14-25.
5. Begum, A., Jingwei, L., Haider, M., Ajmal, M. M., Khan, S., & Han, H. (2021). Impact of Environmental Moral Education on Pro-Environmental Behaviour: Do Psychological Empowerment and Islamic Religiosity Matter?. *International Journal of Environmental Research and Public Health,* 18(4), 1604.
6. Bhat, S. A., Zahid, A. T., Sheikh, B. A., & Parrey, S. H. (2017). Environmental education in India: An approach to sustainable development. FIIB Business Review, 6(1), 14-21.
7. Blatt, E. N. (2013). Exploring environmental identity and behavioural change in an Environmental Science course. Cultural Studies of Science Education, 8, 467-488.
8. Bragg, E. A., & Sheffield, D. (2013). Associations between environmental identity, community identification, and pro-environmental behaviour among rural Australians. Environment and Behavior, 45(5), 583-605.
9. Brick, C., Sherman, D. K., & Kim, H. S. (2017). "Green to be seen" and "brown to keep down": Visibility moderates the effect of identity on pro-environmental behaviour. *Journal of Environmental Psychology*, 51, 226-238.
10. Chawla, L. (2020). Childhood nature connection and constructive hope: A review of research on connecting with nature and coping with environmental loss. People and Nature, 2(3), 619-642.
11. Chen, S., Wan, F., & Yang, S. (2022). Normative misperceptions regarding pro-environmental behaviour: Mediating roles of outcome efficacy and problem awareness. *Journal of Environmental Psychology*, 101917.
12. Clayton, S., & Opotow, S. (2003). Identity and the environment in which we live: Applying identity theory to environmentalism. Journal of Environmental Psychology, 23(3), 239-248.
13. Converse, B. A., & Austin, M. M. (2022). People-watching and the environment: Looking for signs of hope while concern outpaces action. Current Opinion in Psychology, 43, 249-253.
14. Daly, D. (2020). A Storied Perspective on Climate Change: The Effects of Narrative Transportation and Mortality Salience on Pro-Environmental Behavior.

15. Dellavia, L. (2021). The Impact of Time Outdoors on Pro-Environmental Behaviours as a Function of Child and Teacher Connectedness to Nature (Doctoral dissertation).
16. De Leeuw, A., Valois, P., Ajzen, I., & Schmidt, P. (2015). Using the theory of planned behaviour to identify key beliefs underlying pro-environmental behaviour in high-school students: Implications for educational interventions. *Journal of environmental psychology,* 42, 128-138.
17. Dresner, M., Handelman, C., Braun, S., & Rollwagen-Bollens, G. (2015). Environmental identity, pro-environmental behaviours, and civic engagement of volunteer stewards in Portland area parks. Environmental Education Research, 21(7), 991-1010.
18. Eijsink, S. M. C. (2022). The effects of gain-loss and locality framed narratives on the intention to engage in pro-environmental behaviour to mitigate climate change.
19. El Batri, B., Alami, A., Zaki, M., Nafidi, Y., & Chenfour, D. (2019). Promotion of environmental knowledge and behaviour through the Moroccan syllabus of sciences in middle school. *International Electronic Journal of Elementary Education*, 11(4), 371-381.
20. Fang, W. T., Hassan, A. A., & LePage, B. A. (2022). Introduction to Environmental Education. In The Living Environmental Education: Sound Science Toward a Cleaner, Safer, and Healthier Future (pp. 3-24). Singapore: Springer Nature Singapore.
21. Fatoki, O. (2022). Environmental Self-Identity And Energy Saving Behaviour Of Hotel Employees: The Mediating Role Of Intrinsic Motivation. *GeoJournal of Tourism and Geosites*, 42, 743-750.
22. Gatersleben, B., Murtagh, N., & Abrahamse, W. (2014). Values, identity and pro-environmental behaviour. Contemporary Social Science, 9(4), 374-392.
23. Geiger, N., Gasper, K., Swim, J. K., & Fraser, J. (2019). Untangling the components of hope: Increasing pathways (not agency) explains the success of an intervention that increases educators' climate change discussions. *Journal of Environmental Psychology*, 66, 101366.
24. Geiger, N., Swim, J. K., Gasper, K., Fraser, J., & Flinner, K. (2021). How do I feel when I think about taking action? Hope and boredom, not anxiety and helplessness, predict intentions to take climate action. *Journal of Environmental Psychology*, 76, 101649.
25. 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.
26. Green, C., Kalvaitis, D., & Worster, A. (2016). Recontextualizing psychosocial development in young children: A model of environmental identity development. Environmental Education Research, 22(7), 1025-1048.
27. Groeneveld, L. (2019). The effect of narrativity and medium type in climate change communication on pro-environmental attitudes and intentions: do they matter?(Bachelor thesis).
28. Guenette, J. (2020). Hope in the face of climate change, existential meaning, and social connectedness.

29. Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). The Guilford Press.
30. Hinds, J., & Sparks, P. (2009). Investigating environmental identity, well-being, and meaning. Ecopsychology, 1(4), 181-186.
31. Hruska, B. L., Johnson, L. A., & Lawrence, C. (2019). Developing an environmental identity and engagement scale (EIES) for college students. Sustainability, 11(7), 1961. doi: 10.3390/su11071961
32. Kaplan, H., & Madjar, N. (2015). Autonomous motivation and pro-environmental behaviours among Bedouin students in Israel: a self-determination theory perspective. Australian Journal of Environmental Education, 31(2), 223-247.
33. Khare, A. (2015). Influence of green self-identity, past environmental behaviour and income on Indian consumers' environmentally friendly behaviour. *Journal of Global Scholars of Marketing Science*, 25(4), 379-395.
34. Khare, A. (2015). Antecedents to green buying behaviour: a study on consumers in an emerging economy. Marketing Intelligence & Planning.
35. Li, C., & Monroe, M. C. (2018). Development and validation of the climate change hope scale for high school students. Environment and Behavior, 50(4), 454-479.
36. Loy, L. S., & Reese, G. (2019). Hype and hope? Mind-body practice predicts pro-environmental engagement through global identity. Journal of Environmental Psychology, 66, 101340.
37. Loy, L. S., Clemens, A., & Reese, G. (2022). Mind–body practice is related to pro-environmental engagement through self-compassion and global identity rather than to self-enhancement. Mindfulness, 13(3), 660-673.
38. Marlon, J. R., Bloodhart, B., Ballew, M. T., Rolfe-Redding, J., Roser-Renouf, C., Leiserowitz, A., & Maibach, E. (2019). How hope and doubt affect climate change mobilisation. Frontiers in Communication, 4, 20.
39. Mateer, T. J., Melton, T. N., Miller, Z. D., Lawhon, B., Agans, J. P., & Taff, B. D. (2022). A multi-dimensional measure of pro-environmental behaviour for use across populations with varying levels of environmental involvement in the United States. Plos one, 17(10), e0274083.
40. Milfont, T. L., Davies, C. L., & Wilson, M. S. (2019). Supplementary materials to "The moral foundations of environmentalism: Care-and fairness-based morality interact with political liberalism to predict pro-environmental actions.
41. Moezzi, M., Janda, K. B., & Rotmann, S. (2017). Using stories, narratives, and storytelling in energy and climate change research. Energy Research & Social Science, 31, 1-10.
42. Morris, B. S., Chrysochou, P., Christensen, J. D., Orquin, J. L., Barraza, J., Zak, P. J., & Mitkidis, P. (2019). Stories vs. facts: triggering emotion and action-taking on climate change. Climatic change, 154, 19-36.
43. Ojala, M. (2012). Hope and climate change: The importance of hope for environmental engagement among young people. Environmental Education Research, 18(5), 625-642.

44. Olivos, P., & Clayton, S. (2017). Self, nature and well-being: Sense of connectedness and environmental identity for quality of life. In Handbook of environmental psychology and quality of life research (pp. 107-126). Springer, Cham.
45. Oreg, S., & Katz-Gerro, T. (2006). Predicting pro environmental behaviour cross-nationally: Values, the theory of planned behaviour, and value-belief-norm theory. Environment and behaviour, 38(4), 462-483.
46. Park, A., Williams, E., & Zurba, M. (2020). Understanding hope and what it means for the future of conservation. Biological Conservation, 244, 108507.
47. Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behaviour and reasoned action. *Journal of retailing and consumer services*, 29, 123-134.
48. Prévot, A. C., Clayton, S., & Mathevet, R. (2018). The relationship of childhood upbringing and university degree program to environmental identity: Experience in nature matters. Environmental Education Research, 24(2), 263-279.
49. Sabherwal, A., & Shreedhar, G. (2022). Stories of intentional action mobilise climate policy support and action intentions. Scientific Reports, 12(1), 1179.
50. Saputra, N., Siagian, N., Owon, R. A. S., & Rawadhy, I. (2022, December). The correlation of environmental education, environmental knowledge, environmental involvement, and waste management behaviour. In IOP Conference Series: Earth and Environmental Science (Vol. 1105, No. 1, p. 012008). IOP Publishing.
51. Sehat-pour, H. (2022). Assessing the influence of story-based narratives on pro-environmental consumption behaviour using the Theory of Planned Behaviour (TPB) (Doctoral dissertation).
52. Simpson, B., Maguire, M., & Schermer, J. A. (2021). Predicting pro-environmental values and behaviours with the supernumerary personality inventory and hope. Personality and Individual Differences, 181, 111051.
53. Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. Journal of Environmental Psychology, 21(4), 327-339.
54. Simpson, B., Maguire, M., & Schermer, J. A. (2021). Predicting pro-environmental values and behaviours with the supernumerary personality inventory and hope. Personality and Individual Differences, 181, 111051.
55. Soenens, B., & Vansteenkiste, M. (2011). When is identity congruent with the self? A self-determination theory perspective. In the Handbook of identity theory and research (pp. 381-402). New York, NY: Springer New York.
56. Steg, L., Perlaviciute, G., Van der Werff, E., & Lurvink, J. (2014). The significance of hedonic values for environmentally relevant attitudes, preferences, and actions. Environment and behaviour, 46(2), 163-192.
57. Steele, L. R., Baker, S. C., & Kral, M. J. (2018). Life histories and environmental advocacy: Navigating narratives in the Canadian arctic. *Journal of Environmental Psychology*, 56, 57-66. doi: 10.1016/j.jenvp.2018.03.001
58. Stevenson, K., & Peterson, N. (2015). Motivating action through fostering climate change hope and concern and avoiding despair among adolescents. Sustainability, 8(1), 6.

59. Susan, C. (2019). Environmental identity in Russia: Validation and relationship to the concern for people and plants. Психология. Журнал Высшей школы экономики, 16(1), 85-107.
60. Tartaro, A. (2017). Turning off the Lights at the End of the World: An Examination of Hope, Environmental Identity and Pro-Environmental Behavior (Doctoral dissertation).
61. Van der Werff, E., Steg, L., & Keizer, K. (2013). It is a moral issue: The relationship between environmental self-identity, obligation-based intrinsic motivation and pro-environmental behaviour. Global environmental change, 23(5), 1258-1265.
62. Van der Werff, E., Steg, L., & Keizer, K. (2014). Follow the signal: when past pro-environmental actions signal who you are. *Journal of Environmental Psychology*, 40, 273-282.
63. Velautham, L. (2022). Four Short Experimental Interventions That Increase Hope About Humans' Ability to Solve Climate Change (Doctoral dissertation, UC Berkeley).
64. Walker, A. (2019). Culturally relevant pedagogy, identity, presence, and intentionality: A brief review of literature. *Journal of Research Initiatives*, 4(3), 11.
65. Wang, Q., Kou, Z., Sun, X., Wang, S., Wang, X., Jing, H., & Lin, P. (2022). Predictive Analysis of the Pro-Environmental Behaviour of College Students Using a Decision-Tree Model. *International Journal of Environmental Research and Public Health*, 19(15), 9407.
66. Wang, X., Van der Werff, E., Bouman, T., Harder, M. K., & Steg, L. (2021). I am vs. We are: how biospheric values and environmental identity of individuals and groups can influence pro-environmental behaviour. Frontiers in psychology, 12, 618956.
67. Watson, T. J. (2008). Organising and managing work: Narratives of identity and identification. Palgrave Macmillan.
68. Williamson, K., & Thulin, E. (2022). Leveraging emotion-behaviour pathways to support environmental behaviour change. Ecology and Society, 27(3).
69. Whitmarsh, L. (2008). Are flood victims more concerned about climate change than other people? The role of direct experience in risk perception and behavioural response. *Journal of Risk Research*, 11(3), 351-374.
70. Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of environmental psychology*, 30(3), 305-314.
71. Yang, B., Wu, N., Tong, Z., & Sun, Y. (2022). Narrative-based environmental education improves environmental awareness and environmental attitudes in Children aged 6–8. I*nternational Journal of Environmental Research and Public Health*, 19(11), 6483.
72. Yang, Y., Xu, X., Liu, W., & Pang, W. (2020). Hope and creative self-efficacy as sequential mediators in the relationship between family socioeconomic status and creativity. Frontiers in Psychology, 11, 438.
73. Yu, T. K., Lin, F. Y., Kao, K. Y., & Yu, T. Y. (2019). Encouraging environmental commitment to sustainability: An empirical study of environmental connectedness theory to undergraduate students. Sustainability, 11(2), 342.

74. Yusliza, M. Y., Amirudin, A., Rahadi, R. A., Nik Sarah Athirah, N. A., Ramayah, T., Muhammad, Z., ... & Mokhlis, S. (2020). An investigation of pro-environmental behaviour and sustainable development in Malaysia. Sustainability, 12(17), 7083.
75. Yusuf, R., & Fajri, I. (2022). Differences in behaviour, engagement and environmental knowledge on waste management for science and social students through the campus program. Heliyon, 8(2), e08912.
76. Zaikauskaite, L., Chen, X., & Tsivrikos, D. (2020). The effects of idealism and relativism on the moral judgement of social vs. environmental issues, and their relation to self-reported pro-environmental behaviours. Plos one, 15(10),.

APPENDIX A: Consent Form for Survey

Greetings!!

I'm Vedika Duggal, a student of Psychology (Masters) - Thapar Institute of Engineering, Patiala. I'm conducting this survey to study "Does being Hopeful make you Green?," as a part of my Masters' Research Thesis. I request you to spare a little time to fill in your responses for the same, I shall be grateful to you. I assure that all the information provided will be kept strictly confidential. In case of any query or clarification kindly mail at the following e-mail address.
Thank You!!

Email at: vduggal_ma21@thapar.edu)

Consent Form

To participate in this research study, you must give your consent. By agreeing to this statement, you indicate that you understand the nature of the research study and your role in that research and that you agree to participate in the research. Please consider the following points before giving your consent: -

- ☐ I understand that I am participating in psychological research.
- ☐ I understand that I will engage in filling up required questionnaires.
- ☐ I understand that my responses and my information will be kept confidential.

Name-

Age-

E-mail Id-

Gender-

Program you are pursuing

APPENDIX B : Revised Environmental Identity Scale (EID-R)

Please indicate the extent to which each of the following statements describes you by using the appropriate number from the scale below.

1 2 3 4 5 6 7

Not at all true of me Neither true nor untrue completely true of me

_____ 1. I like to spend time outdoors in natural settings (such as woods, mountains, rivers, fields, local parks, lake or beach, or a leafy yard or garden)

_____ 2. I think of myself as a part of nature, not separate from it.

_____3. If I had enough resources such as time or money, I would spend some of them to protect the natural environment.

_____ 4. When I am upset or stressed, I can feel better by spending some time out-doors surrounded by nature.

_____ 5. I feel that I have a lot in common with wild animals.

_____ 6. Behaving responsibly toward nature -- living a sustainable lifestyle -- is important to who I am.

_____ 7. Learning about the natural world should be part of everyone's upbringing.

_____ 8. If I could choose, I would prefer to live where I can have a view of the natural environment, such as trees or fields.

_____ 9. An important part of my life would be missing if I was not able to get outside and enjoy nature from time to time.

_____ 10. I think elements of the natural world are more beautiful than any work of art.

_____ 11. I feel refreshed when I spend time in nature

_____ 12. I consider myself a steward of our natural resources.

_____ 13. I feel comfortable out in nature.

_____ 14. I enjoy encountering elements of nature, like trees or grass, even when I am in a city setting

APPENDIX C: Recurring Pro Environment Behaviour Scale

Please respond to these questions about your behaviour. Don't feel any pressure, just indicate what you choose to do." Items are rated 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Often) or 5 (Always)

1. When you visit the grocery store, how often do you use reusable bags?
2. How often do you walk, bicycle, carpool, or take public transportation instead of driving a vehicle by yourself?
3. How often do you drive slower than 60mph on the highway?
4. How often do you go on personal (non-business) air travel?
5. How often do you compost your household food garbage?
6. How often do you educate yourself about the environment?
7. How often do you engage in political action or activism related to protecting the environment?
8. How often do you carry a reusable water bottle?
9. When you buy clothing, how often is it from environmentally friendly brands?
10. How often do you discuss environmental topics, either in person or with online posts (Facebook, Twitter, etc.)?
11. When you are in PRIVATE, how often do you sort trash into the recycling?
12. When you are in PUBLIC, how often do you sort trash into the recycling?
13. How often do you use aerosol products? (Gel toothpastes, hydrating creams and lotions, sunscreen)
14. How often do you act to conserve water, when showering, cleaning clothes, dishes, watering plants, or other uses?
15. Would you prefer to buy high efficiency compact fluorescent (CFL) or LED bulbs?
16. How often do you turn your personal electronics off or in low-power mode when not in use?
17. How often do you eat from a home vegetable garden (during the growing season)?
18. How often do you eat local food?
19. How often do you eat organic food?
20. How often do you eat dairy products such as milk, cheese, eggs, or yoghurt?
21. Are you aware of the negative environmental effects of meat consumption

APPENDIX D : Climate Change Hope Scale

Please indicate how you feel after reading the statements.

1 = Strongly disagree
2 = Disagree
3= Slightly disagree
4 = Neutral
5 = Slightly agree
6 = Agree
7 = Strongly agree

1) I believe people will be able to solve problems caused by climate change.

2) I believe scientists will be able to find ways to solve problems caused by climate change.

3) Even when some people give up, I know there will be others who will continue to try to solve problems caused by climate change.

4) If everyone works together, we can solve problems caused by climate change.

5)I am willing to take actions to help solve problems caused by climate change.

6)I believe more people are willing to take actions to help solve problems caused by climate change.

7)I know that there are things that I can do to help solve problems caused by climate change.

8)I know what to do to help solve problems caused by climate change.

9) Climate change is beyond my control, so I won't even bother trying to solve problems caused by climate change.

10) Climate change is so complex we will not be able to solve the problems that it causes.

11) The actions I can take are too small to help solve problems caused by climate change

APPENDIX E: Consent Form for Narrative Analysis

You are being invited to participate in a research study. The purpose of this study is to investigate the effect of hope on a person's environment identity and pro environmental behaviour Specifically, the study will explore how individuals' intentions to protect the environment, gain appreciation from others, or improve personal health affect their climate actions by reading the story.

You will be asked to read a story about a day in the life of the protagonist who took the same individual and collective climate actions (i.e., chose a vegan meal during lunch with friends and signed a climate petition at work), but had differing intentions. After reading the story, you will be asked to fill out a questionnaire. If you find any questions to be sensitive, you may ask for clarification. The benefits of this study include contributing to the understanding of how different intentions affect climate actions, which may lead to better environmental practices in the future.

All data collected will be kept confidential and will only be accessible to the research team. Participants' names will not be recorded, and all data will be kept in a secure location.Participation in this study is entirely voluntary, and you may withdraw at any time without penalty. If you decide to withdraw from the study, your data will not be used in the analysis.

Consent:

I have read and understand the information provided above. I voluntarily agree to participate in this study, and I understand that I may withdraw at any time without penalty.

Participant Signature: _____ Date: _____

Investigator Signature: _____ Date: _____

THE INTENTIONAL ENVIRONMENTALIST

A Day in the Life

Morning
After hitting snooze for the fifth consecutive time, George tumbled out of bed, groaning.
"8.30 AM already... argh... it's not even my work from home day". Sophie turned to her side, pulling the duvet over her head.
He looked balefully at his reflection while hurriedly brushing his teeth, mulling over whether he would be late. No, how late he would be. Perhaps binge-watching Black Mirror on Netflix last night wasn't the best idea. Making do with stubble and grabbing a banana for breakfast, George rushed to work.
Noon
Despite being late, George felt like he had already put in a day's work. So many emails, so many meetings, so many Zoom calls. He was hungry and his stomach rumbled. It was time for lunch. Please. Unlike most days when he ate in front of his desk, toggling between his work and Facebook, George actually had plans today. He was grabbing lunch with his old college friends. Thank goodness they lived and worked close by so they managed a lunch catch-up regularly - at least once or twice a month. Today, they were going to grab some take-away sandwiches at a new café, Butter my Buns. Ha.
While he was waiting outside, his mate Robbie arrived, "Watched the game last night?" The others - Oli and Emily - soon showed up giggling and they trooped inside.
"BLTs all around?" Robbie asked. The Bacon Lettuce and Tomato sandwich brought back a flood of memories for the group - after all, it used to be their staple post night-out meal back in undergrad.
George wanted to say an emphatic "yes" to the BLT: But before he said anything, his stomach sank (still rumbling). He remembered reading that research has shown that emissions from red meat are one of the largest contributors to climate change, and that livestock production also uses-up precious land and water which could be rewilded instead. The BLT was tempting- it looked delicious, but ultimately, George wanted to reduce his environmental footprint. Sighing, George took the plunge, "Falafel - the veg one - for me please.»
Expectedly, he received some pointed jabs from his friends- "Falafel... just eat a carrot mate.. you going vegan yeah? Changing the world one falafel at a time? Mr. Goody Two-Shoes yeah?" Robbie, Oli and Emily giggled. George rolled his eyes and was about to launch into an explanation on his resolve to be sustainable when the sandwich arrived. It was time to dig in!

Afternoon
A few hours left of work and George was just itching to leave. He looked at his phone for the tenth time. As he was about to tackle his last task for the day, he saw a new email. Sent by an employee from another department, the email was titled, "Our

Company Must Achieve Net-Zero Emissions." In the email, there was a link to a google document, a petition which employees could sign. 'If many members of our organisation sign this petition, the leadership will have to take notice and enable us to make a complete transition to renewable energy sources. Please sign your name here to express the demand for the organisation to go net-zero."
[1:50 pm, 06/04/2023] Shashwat Ma: Should I sign it? It was a rather combative email, George thought to himself. An employee asking others to organise... I'll be branded as a "radical".
... is it worth the risk? This was the
first incident of its kind in the office, at least to his knowledge. Signing this petition would mean expressing his dissatisfaction with the organisation's current performance. The management would have a complete list of the names of those who did sign the petition.
George was worried that his (rather annoying and micromanaging) boss may see it. His boss knowing that George signed it could affect his performance review. Let's not take an impulsive decision to sign this, he thought. Let's park this.

Evening
Nearly there, almost done, just 20 minutes left and then log off. George found his mind wandering back to sixth form. He and his friends signed a campaign demanding that all plastic packaging including food wrappers and disposable bottles be eliminated from the school canteen. The head teacher was not pleased - but the petitioners had their way in the end and the school became much more sustainable, with drastically lower plastic waste.
Remembering this incident presented George with the obvious benefit of signing the petition
- it could lead to a positive environmental impact. His - large - organisation may even eliminate their carbon emissions if they aimed for net zero. This petition could be the start of something big, which could help address climate change. At that moment, George knew that he wanted to improve not only his personal, but also his organisation's impact on the planet. Screw it, let's see what happens, thought George as he found himself signing the petition.
As he was turning off this laptop, his email pinged. His boss. "George, let's have a chat tomorrow." George muttered "Jeez. This is tomorrow's problem" and turned off the light.

Night
George and Sophie sat on the couch, digesting. George had made the delicious pesto pasta since it was his turn to cook. Upon listening to George's recollection of his day, Sophie remarked, "Woah babe! Busy day. Good on you for sticking to all those sustainable choices." George managed to look smug and sheepish all at once, "It was tough and annoying, especially when they told me to eat a carrot. But I did it for the planet. Hey, wanna watch another Black Mirror episode?"

THE ACCIDENTAL ENVIRONMENTALIST

A Day in the Life

Morning
After hitting snooze for the fifth consecutive time, George tumbled out of bed, groaning "8.30 AM already... argh... it's not even my work from home day". Sophie turned to her side, pulling the duvet over her head. He looked balefully at his reflection while hurriedly brushing his teeth, mulling over whether he would be late. No, how late he would be. Perhaps binge-watching Black Mirror on Netflix last night wasn't the best idea. Making do with stubble and grabbing a banana for breakfast, George rushed to work.

Noon
Despite being late, George felt like he had already put in a day's work. So many emails, so many meetings, so many Zoom calls. He was hungry and his stomach rumbled. It was time for lunch. Please. Unlike most days when he ate in front of his desk, toggling between his work and Facebook, George actually had plans today. He was grabbing lunch with his old college friends. Thank goodness they lived and worked close by so they managed a lunch catch-up regularly - at least once or twice a month. Today, they were going to grab some take-away sandwiches at a new café, Butter my Buns. Ha.
While he was waiting outside, his mate Robbie arrived, "Watched the game last night?" The others - Oli and Emily - soon showed up giggling and they trooped inside. "BLTs all around?" Robbie asked. The Bacon Lettuce and Tomato sandwich brought back a flood of memories for the group - after all, it used to be their staple post night-out meal back in undergrad.
George wanted to say an emphatic "yes" to the BLT. But before he said anything, his stomach sank (still rumbling). He remembered reading that research has shown that eating red meat can increase the likelihood of having deadly health problems such as cardiovascular disease, diabetes, or even stroke. The BLT was tempting- it looked delicious, but ultimately, George wanted to lead a healthier lifestyle. Sighing, George took the plunge, Falatel - the veg one - for me please." Expectedly, he received some pointed jabs from his friends- "Falafel... just eat a carrot mate... you going vegan yeah? Changing your life one falafel at a time? Mr.
Goody Two-Shoes yeah?" Robbie, Oli and Emily giggled. George rolled his eyes and was about to launch into an explanation on his resolve to be healthy when the sandwich arrived. It was time to dig in!

Afternoon
A few hours left of work and George was just itching to leave. He looked at his phone for the tenth time. As he was about to tackle his last task for the day, he saw a new email. Sent by an employee from another department, the email was titled, "Our Company Must Achieve Net-Zero Emissions." In the email, there was a link to a

google document, a petition which employees could sign. "If many members of our organisation sign this petition, the leadership will have to take notice and enable us to make a complete transition to renewable net-zero. energy sources. Please sign your name here to express the demand for the organisation to go. Should I sign it? It was a rather combative email, George thought to himself. An employee asking others to organise... I'lI be branded as a "radical"... is it worth the risk? This was the first incident of its kind in the office, at least to his knowledge. Signing this petition would mean expressing his dissatisfaction with the organisation's current performance. The management would have a complete list of the names of those who did sign the petition. George was worried that his (rather annoying and micromanaging) boss may see it. His boss knowing that George signed it could affect his performance review. Let's not take an impulsive decision to sign this, he thought. Let's park this.

Evening
Nearly there. almost done, just 20 minutes left and then log off. George found his mind wandering back to sixth form. He and his friends signed a campaign demanding that all plastic packaging including food wrappers and disposable bottles be eliminated from the school canteen. The head teacher was not pleased - but the petitioners had their way. In the end the canteen's food become healthier, free of toxic chemicals like BPA. Remembering this incident presented George with the obvious benefit of signing the petition - it could lead to actual health benefits. His - large - organisation may even eliminate their carbon emissions.
This would reduce air pollution and lower chances of respiratory diseases. This petition could be the start of something big, helping to fight diseases like asthma and heart attacks. At that moment, George knew that he not only wanted to personally promote a healthy lifestyle, but also wanted his organisation to do the same. Screw it, let's see what happens, thought George as he found himself signing the petition.
As he was turning off this laptop, his email pinged. His boss. "George, let's have a chat tomorrow." George muttered "Jeez. This is tomorrow's problem" and turned off the light.

Night
George and Sophie sat on the couch, digesting. George had made the delicious pesto pasta since it was his turn to cook. Upon listening to George's recollection of his day, Sophie remarked, "Woah babe! Busy day. Good on you for sticking to all those healthy choices." George managed to look smug and sheepish all at once, 'It was tough and annoying, especially when they told me to eat a carrot. But I did it for my well being. Hey, wanna watch another Black Mirror episode?"

CONTROL:

A Day in the Life
George is a freelance writer. George describes what a typical day in his life looks like....

Morning
Like many of us, I start the day by turning off my alarm and checking email while still under the covers. I do not snooze. It is a regrettably sleepy start to the day since I was up last night, binge-watching Black Mirror on Netflix. The majority of my emails are crap, even after filters and unsubscribes, but I usually find one or two useful messages from editors or clients. I'm looking for anything to add to my to-do list, which is currently sitting in a green notebook next to my laptop, waiting to be opened, so I can get to work. Although, since I'm checking email, work has already started,
I am a man of routine who believes no home is complete without a bright red electric kettle, and I use that kettle to heat up water for my breakfast. It's the same breakfast every morning: one large cup of drip coffee in an enormous mug shaped like an owl and one bowl of quick-cook oatmeal with a handful of plain almonds and a squirt of.honey. Once the emails are taken care of, the next hour is devoted to reading online. I hit the popular news outlets- in addition to Facebook, Twitter, and Tumblr. Reading everyone's outsized opinions on world events can be fun, but it's also an important part of my process. I need to know what's going on in the world to write effectively about the current landscape and incorporate important events into my pieces.
After reading, I make my to-do list for the day. The first item on the list is always "PROCESS."I pull out my master "Getting Things Done" list and my enormous spreadsheet that tracks deadlines, word counts, and the pay for each job. On an average day, I'll have to complete six pieces. I try to finish the first two before 10:30. I tend to pick out the shortest, easiest pieces first, because they serve as a warm-up for the rest of the day. If a client wants 450 words about how to dress for an interview, or a 400-word email campaign announcing a new product, that gets done in the morning. It takes me about 30 minutes to write 400 words, and I don't write with the intention of revising a first draft. I don't outline, either. I read over each piece once or twice, make any necessary tweaks, and turn it in. I do, however, like to let pieces marinate in my mind before I start writing, which is why I try to complete the easiest jobs first. At this point, the more complex afternoon jobs are still busy sorting themselves out in my brain.

Afternoon
Between 10:30 and 12:30 I scan my go-to sites for new news, and I also check in with social media. I tweet quips at my friends, or I post an interesting link to Tumblr, and I also read whatever my friends are posting. And yes, I'm still in my sweatpants. But don't worry- I brush my teeth as soon as I finish my coffee. I then eat a quick lunch.

Like almost always, it is a sandwich, some chips, and a small square of what I call "Otter chocolate."
The first part of the afternoon is best for longer pieces, though I'm usually still putting off my
"hardest piece while it rumbles around. I used to think it would be easier to write long-form personal essays--than to trudge through "How to Dress for an Interview" or "7 Ways to Save Money on Your Summer Vacation." I was completely wrong. I sometimes switch my desk from "sitting" to "standing" mode because sitting in the same spot for hours on end doesn't

Evening
I try to finish up work between 6:00 and 7:00 p.m. (There is usually one night per week when I work until 10:00.) Then, I'm either going to play Dungeons & Dragons with friends, or just hang out. The thing I don't want to do is write all night, think about upcoming jobs, or try to get ahead on my work, even though I sometimes do all of those things. But based on experience, if I work too late, I'll spend the next morning staring blankly at my laptop, feeling like I drained all my energy the night before. Eventually, I'll come home for the night and read a little for leisure. In case you haven't noticed, I like to mix things up so that I don't fall into the rut of work-eat-sleep-repeat. It may be one of the secret reasons why I became a freelancer. It may also be one of the secret reasons I'm able to write more than 3,000 words every weekday.

Night
I wind down by taking a nice warm shower and spend the very end of the night chatting with my girlfriend Sophie, who lives in a different city than me. Around 12:30 a.m., I go to bed. Although I try to resist it, I will probably end-up bingeing a few episodes of Black Mirror again. The alarm is set, and I've already written "PROCESS" in my green notebook, preparing for the next workday to begin.