Factors of Students' Pro-Environmental Behaviour towards Sustainable Development

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ARTICLE INFO	**ABSTRACT**

This study aims to determine the impact of certain environmental factors on the pro-environmental behaviour of students in Higher Education. A plethora of literature already exists on this subject; however, there is a significant gap in such research in the context of Pakistan's Higher Education Institutions. Along with that, the combination of the variables chosen for the research had yet to be studied in detail, especially in the context of Educational Institutions in Pakistan. The study analyzed the impact of environmental consciousness, green lifestyle, and green self-efficacy on university students' pro-environmental behaviour, with the mediating role of environmental commitment. Data was collected using a standardized questionnaire on a 372-person sample of university students using convenience sampling via web interface. The sample of 372 students, from both private and public higher educational institutions, was chosen from whom to collect data, develop analysis, and draw results for our findings. Multiple statistical techniques were applied through SPSS Statistics 21 to analyze the data, and these included correlation analysis, regression analysis, and exploratory factor analysis. The hypotheses were tested through the simple mediation model, using the Hayes Process. Our findings fill a gap in the research by demonstrating that individuals can indulge in green self-efficacy, a green lifestyle, and be environmentally conscious, which promotes their pro-environmental behaviour, when they are committed to the environment. The study provides useful insight for researchers and higher education practitioners/policymakers to facilitate environmental consciousness among graduates.

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Introduction

The concept of sustainable development (SD) was first published by the World Conservation Strategy, and since then, it has been considered as an integral part of concepts including environment and development. The Brundtland Report defined SD as development that meets the needs of future generations without compromising the ability of future generations to meet their needs" (Emas, 2015). SD has been considered an ample part of various institutions of society for many years now.

Pro-environmental behaviour has been defined as the actions individuals tend to take consciously to promote the well-being of the environment and to further enhance its quality. According to Ramus and Kilmer (2007), it has been termed as a type of pro-social behaviour, which primarily focuses on increasing the welfare of associated groups within a society.

As per the United Nations – Decade of Education for Sustainable Development (UN DESD, 2014), universities and other higher institutions should ensure that they provide a space for learning and promoting sustainable development. Higher Education is considered one of the leading drivers in the development of the socio-economic system of a state (Dakhan, 2020). Therefore, in Pakistan, over the last few years, there has been ample collaboration in sustainable development in Higher Education institutions, including in research and education, assessments, and institutional frameworks (Naureen & Lodhi, 2015). This progress can further be demonstrated through examples like the importance of courses in corporate social responsibility (CSR), the development of e-learning courses focused on sustainability, and significant stress being placed upon the teachings of Bloom's Taxonomy, for application in education, that have now become an integral part of university courses in Pakistan (Lozano *et al.*, 2017).

The problem of climate change, pollution and global warming has been on a significant rise, and action needs to be taken (Fig. 1). According to an IPCC report (IPCC, 2021), the temperature of the Earth will likely rise by 1.5 degrees Celcius, or probably even more than that, over the next two decades, far, far above the pre-industrial level (Harvey *et al.*, 2021). This will certainly lead to extreme weather conditions and an immense amount of devastation. By studying and going through various institutions' policy journals and websites, we discovered that individuals are not properly aware of the seriousness of this issue. The institutions are focusing more on the concept of proving the facts rather than taking any serious preventive action and implementing change.

Pakistan itself is facing a lot of environmental challenges, including pollution, rapid urbanization, deforestation, poverty, etc. The Higher Education Development Program (HEDP) is looking to promote excellence in various sectors of the state, among them in economic, social, and educational institutions. This will eventually promote sustainable development and increased social benefits. However, the aspect of quality assurance of the institutions is important, as it plays a significant role in the functioning and building of a flexible society (Batool & Qureshi, 2007).

With our research study in mind, we recognize that students need to gain awareness and knowledge about the ways through which they can act in a pro-environmental way and promote sustainable development

in society. The benefit of this study will be two-fold, and it will add to the existing body of knowledge, since no contribution from Pakistan has thus far been made. It also provides useful and impactful insight for practitioners, researchers, etc. The main aim of this study is to induce insights into how environmental factors impact pro-environmental behaviour and eventually lead to the sustainability of the environment.
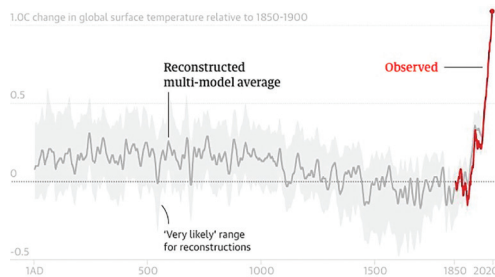

Fig. 1. Human Influence Has Warmed The Climate at a Rate Unprecedented In at Least the Past 2000 Years

Source: Intergovernmental Panel on Climate Change

1. Literature Review and Hypotheses Development

1.1. Green lifestyle and environmental commitment

It is a certain kind of behaviour that encapsulates the concepts of environmental activism, environmental knowledge, environmental concern, recycling, perceived consumer effectiveness, resource saving, and economic factors towards environmental claims. Consumers who are interested in the promotion of green products and intend to buy them have expressed a willingness to engage in any type of green activity in concern for environmental issues (Handoyo & Rufaidah, 2012).

The level of awareness and perception regarding green living among youth has been created by making use of advertising. Indeed, the concept of green thinking should be ingrained in a company's culture and principles. Businesses should strive to provide items that are both environmentally friendly and widely available. They support the idea of going green and following a green lifestyle, but there is no implementation. Many studies have been conducted in recent years that have linked green lifestyle with commitment (Tang *et al.*, 2016), demonstrating that green lifestyle and commitment are positively linked. According to the findings, being environmentally committed to nature is connected with a range of behaviours that are expressive of intrinsic aspiration, including relational feelings of love and caring, and making decisions in favor of the environment that are less selfish in areas of consumption (Tang *et al.*, 2016).

H1: Green lifestyle is positively associated with environmental commitment.

1.2. Green self-efficacy and environmental commitment

Green Self-Efficacy, according to Chen *et al.*, has been defined as the belief that human beings are able of possessing certain capabilities to help achieve actions that have a positive impact on accomplishing environmental goals (Chen *et al.*, 2014a). As per the research that was conducted by Bandura, individuals who have accumulated higher levels of self-efficacy tend to showcase higher performance levels and are generally more committed to their goals.

An individual with higher levels of green self-efficacy tends to better understand the importance of following a green lifestyle

and incorporating environment-friendly and green activities into their day-to-day activities. Consumers are now more interested in the concept of buying environmentally friendly products, due to which businesses have changed and improved their marketing and production strategies to promote environmental commitment (Kim, 2005).

Green self-efficacy promotes the concept of green mindfulness and green creativity. Individuals with high levels of self-efficacy tend to be highly motivated and conscious of the environment. Most of the people now share a green vision, because of which they are highly concerned about the role they play in the environment. This green vision has been implemented and practiced among various business organizations and institutions to increase green mindfulness and promote commitment to the environment (Chen *et al.*, 2014b).

H2: Green Self-Efficacy is positively associated with environmental commitment.

1.3. Environmental consciousness and environmental commitment

Environmental consciousness refers to people's behaviours, attitudes, and actions regarding the environment, and how they mold these personal characteristics to preserve a healthy relationship with their surroundings (Yaqub & Andrews, 2015).

The world is currently experiencing a severe environmental catastrophe. As a result, raising awareness among various organizations and individuals is critical to allow them to build a moral and ethical relationship with nature. When people grow more environmentally conscious, they develop a better understanding of the challenges and issues that are created by human activity. When people spend more time in nature, they become better linked to it and more concerned about its long-term preservation. As a result, when people connect with nature, they logically behave in ways that contribute to nature's viability. It is emphasized that being conscious about nature requires a combination of cognitive, emotional, and behavioural components, as well as the realization that humans, like all other creatures on Earth, are part of the natural environment (Yaqub & Eren, 2015).

H3: Environmental consciousness is positively associated with environmental commitment.

1.4. Green lifestyle and pro-environmental behaviour

Environmental knowledge and education are vital, because when individuals have knowledge of the environment, they can change their behaviour and opt for a certain lifestyle (Steg & Vlek, 2009).

Environmental concern is described as a general attitude indicating a consumer's level of worry about environmental risks. When people are conscious of the environment, it stimulates them to act in environmentally friendly ways and raises awareness of environmental issues. According to (Aziz *et al.*, 2021), the more knowledge a person has, the greater their concern for the environment, which drives people to change their daily routines and act in an environmentally responsible manner. It is argued by Aziz *et al.* (2021) that younger generations are more likely to participate in behavioural changes and lifestyle adaptations to adjust to the changing environment. When environmental concerns are high in an individual, it increases green buying behaviour (Mainieri *et al.*, 1997), and

they consider themselves as compassionate and socially responsible. Pro-environmental behaviour and social norms are shared under-standings of what constitutes acceptable and unacceptable behaviour (Schultz *et al.*, 2007).

H4: A green lifestyle is positively associated with pro-environmental behaviour.

1.5. Green self-efficacy and pro-environmental behaviour

For an individual's behaviour to be fos-tered, institutions such as schools, colleges and universities play an impactful role, thus for universities to promote pro-environmen-tal behaviour, the students need to be con-stantly made conscious of their behaviour and encouraged to avoid any kind of negli-gence that could arise due to human conduct (Yusliza, 2020). According to Huang, through research conducted, it was determined that people in Taiwan tend to engage in pro-en-vironmental behaviour especially when they have achieved green self-efficacy, as it is considered one of the major cognitive fac-tors that allows a person to claim pro-envi-ronmental behaviour (Huang, 2016).

Self-efficacy has a symbiotic association with behaviour, in that it both motivates and is influence by it (Silver *et al.*, 1995). On this premise, we hypothesize that when people believe they can readily commit themselves to pro-environmental behaviour, this may create a sense of self-efficacy in these do-mains.

This study also suggests hypothesizing that reminding people of their collective efficacy could help them improve subjective obstacles by improving their own self-efficacy beliefs.

H5: Green Self-Efficacy is positively associat-ed with pro-environmental behaviour.

1.6. Environmental consciousness and pro-environmental behaviour

human awareness is intrinsically tied to nature and the environment. A variety of ex-ternal factors have an impact on an individ-ual's conscious abilities. Gaining information and education leads to the development of environmental awareness and self-consci-ousness (Bonnett, 2016). One is more likely to engage in activities and behaviours that benefit the environment if they are connect-ed to it and aware of it (Ozmen, 2006).

Furthermore, individuals agree that they are ready to take on more environmental action than they can, and, as a result, daily preventative measures advance to the next, more challenging, stage. Individuals' inten-tions to engage in ecologically responsible behaviour are influenced not just by their own beliefs, but also by others' actions and behaviours (Ozmen, 2006).

According to many researchers (Guo *et al.*, 2019), university strategies and initia-tives, such as supplying disposable contain-ers or presenting environmental-related issues, might encourage pro-environmen-tal behaviour among students. As a result, when people try to change their habits and work for the environment, they become more environmentally conscious and their behaviours are predicted by their activities, in which they tend to behave ethically in the environment, contributing to pro-environ-mental behaviour.

H6: Environmental consciousness is positively associated with pro-environmental behav-iour.

1.7. Environmental commitment and pro-environmental behaviour

In environmental commitment, a person makes a promise and commits to improving their behaviour. Environmental commitment changes behaviour by reducing cognitive dissonance (Festinger, 2012). Commitment has been researched primarily in one dimension in connection with environmental behaviour, which is a commitment to behaviour.

Pro-environmental behaviour incorporates reusing (e.g., reusing paper, plastic, glass, containers, etc.), monitoring water (e.g., restricting the utilization of water when washing hands), saving power (e.g., switching off lights when not required), utilizing public transportation, riding bicycles or walking, properly discarding non-recyclable waste, utilizing less paper when printing (e.g., two-sided printing), and purchasing and additionally consuming green products (Iyer *et al.*, 2016).

Pro-environmental behaviour might be affected by different viewpoints, for example, socioeconomics, sex, age or home/political viewpoint, qualities, and convictions about existence (Panno, 2018). Also, as Vicente-Molina et. Claimed, behaviour can be changed by open arena behaviour, e.g., public arrangements. Pro-ecological behaviour can be straightforwardly impacted by the private and open areas, with models including utilization of green products, utilization of public transportation, and reusing (Bittar, 2018).

H7: Environmental commitment is positively associated with pro-environmental behaviour.

1.8. Environmental commitment mediates the relationship between environmental consciousness and pro-environmental behaviour

Pro-environmental behaviour can be defined as any actions undertaken by individuals to ensure the preservation of the natural environment. In developing countries in particular, the concept of pro-environmental behaviour is still foreign, and thus the government and associated people in power are still focused on ensuring economic and social development, even though it may be causing considerable environmental damage. For instance, excessive fossil fuel consumption has led to emissions of sulphur dioxide and nitrogen dioxide, which has a harmful impact on bodies of water and the overall global atmosphere (Zheng, 2009).

Public environmental consciousness is usually attained through interaction among people within a society, where people join civic movements and force the big corporations to willingly follow through with corporate social responsibility. For students, this can be achieved through education, so that, when they eventually start their careers and move on into the bigger picture of life, their environmental consciousness allows them to pursue pro-environmental behaviour (Zheng, 2009).

H8: Environmental commitment mediates the relationship between environmental consciousness and pro-environmental behaviour.

1.9. Environmental commitment mediates the relationship between a green lifestyle and pro-environmental behaviour

In this study, the term environmental commitment is basically defined as a mindset and a specific psychological state where individuals feel a sense of responsibility for the problems and concerns related to the environment. Various scholars and environment specialists have observed that there isn't much awareness related to the concept of being committed to your environment and being eager enough to find solutions and resolve problems.

A growing body of research has signified the integral importance of studying the relationship between human behaviour, attitude, and actions toward the environment. The objective is to create awareness regarding the minimization of harmful activities and promotion of environment sustainability and resource conservation so that people can adopt a green lifestyle by being committed to the environment, so provoking their pro-environmental behaviour (Ardoin *et al.*, 2013).

H9: Environmental commitment mediates the relationship between a green lifestyle and pro-environmental behaviour.

1.10. Environmental commitment mediates the relationship between green self-efficacy and pro-environmental behaviour

Self-efficacy can be described as the faith in a person's ability to demonstrate a particular behaviour or conduct and effectively carry out tasks to attain specific goals. Referring to Chen *et al.*, the definition of green self-efficacy is the belief in individuals' capabilities to organize and execute the courses of action required to attain environmental goals. Individuals with ahigher degree of self-efficacy are considered more effective, enthusiastic, and committed to their goals.

If an individual believes they are part of a group, for instance as an environmentalist, their course of action and behaviour is committed to following the pre-set norms of that specific group alone. Thus, in a university setting, if students are committed to acting positively toward the environment, their peers would follow suit with their behaviour (Jugert *et al.*, 2016). HEI's policies can mediate this relationship by creating an atmosphere of environmental commitment.

H10: The association between green self-efficacy and pro-environmental behaviour is influenced by environmental commitment.
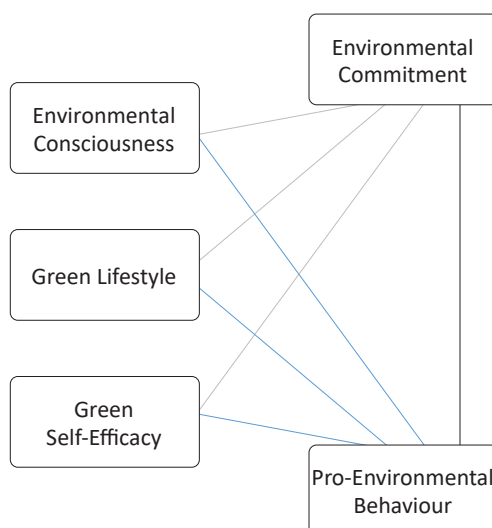
Mediation Model

Fig. 2. Theoretical Framework

2. Methodology

2.1. Research design

Graduating students from both the public and private sectors were the subject of this study, because they can act as pressure groups for environmental reform, demanding changes by participating in debates or protests, and mobilizing support via social media. The research was inferential and cross-sectional in nature, as data was collected from different students in a specific period. Inferential statistics help us to draw conclusions and also help in the development of hypotheses; because our data is quantitative, it compensates for and clarifies the research project. The establishment of a correlation between the variables can also be used to identify the study (of the relationship between environmental commitment and pro-environmental behaviour), how they are linked with each other, and whether they have positive or negative relationships. The unit of analysis included graduating students from three public and three private universities in Lahore, Pakistan.

This research was cross-sectional in nature, which means data was collected from three different private universities and three public universities at the same time: Graduating students from six higher education institutions in Lahore, Pakistan, and graduating students from three public and three private higher education institutions in Lahore, Pakistan. The sample size consists of 372 graduating students from both private and public universities located in Lahore. This sample was chosen due to its feasibility and applicability for gathering data: the plan was to gather data from both public and private students and then analyze the results. To estimate the sample size, the item response theory is a modeling approach that uses formalized statistical models to connect responses to test items with fundamental dormant variables (Lang, 2021). By this, we can calculate the sample size by multiplying the number of items by 15. Sampling of the size could be done in probability or non-probability sampling. In our study, non-probability sampling was used, which includes non-random sampling and collecting data as per convenience. Convenience sampling is used in the data collection and sampling size, as it is a readily accessible pool of survey participants and commonly used sampling technique, being extremely quick, simple, and inexpensive.

2.2. Instruments

To ensure the integrity of our work, we chose a standardized questionnaire for the purpose of our research, including our independent, dependent, and mediating variables. Our questionnaire was further divided into two parts, where the first part included respondents filling in information about themselves, including their name, the institution they attend, the semester they are enrolled in, etc. (demographics). The second part of our questionnaire was made up of questions about the variables of our study.

The respondents' information was completely protected for security reasons, and we ensured the language that we used (English), was written in basic terminology, excluding any jargon or difficult words which our respondents may have found difficult to comprehend. The responses regarding our variables were ranked on a 5 Likert scale, stating the following: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4:

Agree, and 5: Strongly Agree. The questions on demographics inquired about the university our respondents attended, amongst other things. There was a total of 31 questions, and none of the questions required our respondents to write anything in text form.

3. Descriptive Analysis and Testing of Hypothesis

3.1. Descriptive analysis

The research was conducted amongst undergraduate students within universities of Pakistan. The total number of student respondents who participated in our study was 372, of which 85 were male and 287 were female. Most of the participants were female, holding a percentage of 77.2%. We also questioned the age of our respondents and the semester in which they were studying. As demonstrated by Table 1, most of the participants resided in the age group between 21 to 23 years old, holding 64% of the entire data collected. Students over the age of 24 years held just 3.5% of the entire data. As depicted in the frequency analysis of the data in Table 1, the students varied in terms of the semesters they were studying in, where the highest percentage (25.8%) of students were in the 7th semester, and the lowest (3%) were studying in the second semester.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	372	1.00	2.00	1.7715	0.42043
Semester	372	1.00	8.00	5.0323	1.95751
Age of respondent	372	1.00	3.00	1.7097	0.52600

3.2. Hypothesis testing

Table 2. Green Lifestyle, Environmental Commitment, and Pro-Environmental Behaviour

Direct Effect Model			
Predictor	**Outcome = M (environmental commitment)**		
	B	T	P
X (green lifestyle)	0.3685	9.8389	0.0000
Constant	2.3685	15.1031	0.0000
Direct Effect Model			
Predictor	**Outcome = Y (pro-environmental behaviour)**		
	B	T	P
X (green lifestyle)	0.1734	2.8222	0.0050
M (environmental commitment)	0.3803	5.0087	0.0000
Constant	1.2797	4.3999	0.0000
Total Effect Model			
Predictor	**Outcome = Y (pro-environmental behaviour)**		
	B	T	P
X (green lifestyle)	0.3135	5.5540	0.0000
Constant	2.1794	9.2310	0.0000
Indirect Effect and Significance using the Normal Distribution			
	Value	Z	
Sobel	0.1401	4.4454	
Bootstrap results for indirect effect of green lifestyle on pro-environmental behaviour			
Effect	**M**	**LL CL**	UL CL 95%
	0.101	95%	0.2643
		0.0870	

Note: n = 372; Bootstrap sample size = 1000; ß = Unstandardized Regression Coefficient; SE = Standard Error; LL= Lower Limit, UL = Upper Limit; CI = Confidence Interval

Table 3. Green Self-Efficacy, Environmental Commitment, and Pro-Environmental Behaviour

Direct Effect Model			
Predictor	**Outcome = M (environmental commitment)**		
	B	**T**	**P**
X (Green self efficacy)	0.5456	12.8081	0.0000
Constant	1.8171	11.1253	0.0000
Direct Effect Model			
Predictor	**Outcome = Y (pro-environmental be-haviour)**		
	B	T	P
X (green self efficacy)	0.2510	3.1481	0.0018
M (Environ-mental com-mitment)	0.3365	4.1547	0.0000
Constant	1.2131	4.1266	0.0000
Total Effect Model			
Predictor	**Outcome = Y (pro-environmental be-haviour)**		
	B	T	P
X (green self efficacy)	0.4346	6.4092	0.0000
Constant	1.8246	7.0176	0.0000
Indirect Effect and Significance using Normal Distribution			
Sobel	**Value**	**Z**	
	0.1836	3.9411	
Bootstrap results for the indirect effect of green lifestyle on pro-environmental behaviour			
Effect	**M**	**LLCL 95%**	**ULCL 95%**
	0.1836	0.0865	0.3038

Note: n = 372; Bootstrap sample size = 1000; β = Unstandar-dized Regression Coefficient; SE = Standard Error; LL= Lower Limit, UL = Upper Limit; CI = Confidence Interval

4. Discussion

The main objective of this study was to determine the influence of certain environmental factors, namely environmental consciousness, green lifestyle, and green self-efficacy, on students' pro-environmental behaviour. It also portrays the mediating role played by environmental commitment between the dependent and the independent variable. The output of the study shows that environment consciousness, green lifestyle, and green self-efficacy are positively related to students' pro-environmental behaviour. When a student is aware and highly conscious about the role they play in protecting the environment, supports a green lifestyle, and believes in the acceptance and implementation of a green lifestyle, they are better able to act in a more pro-environmental way. The data was collected from 372 students from private and public universities in Lahore, of which 85 were male and 287 were female. Our participants resided in the age group between 21 to 23, from which the highest percent of students were studying in the seventh semester.

Exploratory Factor Analysis was conducted amongst 23 Likert Scale Items, from which the value of KMO was 0.883, which is far higher than the recommended threshold of 0.60. The ranges for the communalities were between 0.467 to 0.776. We also conducted a reliability analysis, where the values of our Cronbach Alpha all came under the acceptable threshold range, from 0.767 to 0.877.

The independent variables also tend to have a positive relationship with the mediator. Environmental consciousness, green lifestyle, and green self-efficacy cause an individual to be considerate and fully committed to

their environment. Environmental commitment mediates the relationship between the three independent variables, environmental consciousness, green lifestyle, and green self-efficacy, and the dependent variable pro-environmental behaviour. Results generated by testing the hypothesis and performing an analysis supported the propositions of our theoretical framework. Hypothesis 1 stated that a "Green Lifestyle is positively associated with Environmental Commitment". The result was proven positive and significant (0.455**). Hypothesis 2 stated that "Green Self-Efficacy is positively associated with environmental commitment". The result was proven positive and significant (0.554**). Hypothesis 3 stated that "Environmental Consciousness is positively associated with environmental commitment". It was proven positive and significant (0.425**). Hypothesis 4 stated that a "Green lifestyle is positively associated with Pro-Environmental Behaviour". It was proven positive and significant (0.277**). Hypothesis 5 stated that "Green Self-Efficacy is positively associated with Pro-Environmental Behaviour". It was proven positive and significant (0.316**). Hypothesis 6 stated that "Environmental Consciousness is positively associated with Pro-Environmental Behaviour". It was proven positive and significant (0.247**). Hypothesis 7 stated that "Environmental Commitment is positively associated with Pro-Environmental Behaviour". It was proven positive and significant (0.342**). Hypothesis 8 stated that "Environmental commitment mediates the relationship between environmental consciousness and Pro-Environmental Behaviour". It was proven positive and significant (0.247**). Hypothesis 9 stated that "Environmental commitment mediates the relationship between

Green Lifestyle and Pro-Environmental Behaviour". It was proven positive and significant (0.277**). Hypothesis 10 stated that "Environmental Commitment mediates the relationship between Green Self-Efficacy and Pro-Environmental Behaviour". It was proven positive and significant (0.316**). Students who have a strong connection to nature are less likely to harm the environment, according to the theory, because the self is tied to nature, and harmful activities would harm the self (Mayer & Frantz, 2004).

Our hypothesized model further demonstrated that individuals who are committed to the environment have a positive and significant relationship with the environment, and this was proven through results established by our data analysis. As per our findings, students who indulge in a green lifestyle are more committed to their environment and thus pursue pro-environmental behaviour and prefer it to be a behaviour shared and encouraged by their educational institutions. Our results further enhanced a positive and significant relationship between green self-efficacy and environmental commitment. Students from reputable universities in Lahore, Pakistan, genuinely believed that they could conquer environmental problems through goals and environmental commitment, and stated they would like their universities to establish environmental policies and would religiously follow them.

It is critical to discuss the main concerns related to adaptation to the change in environment, and how the various institutions around the world, including higher educational institutions, can prepare themselves and manage their resources to overcome this challenge. With our research in mind, we see that students need to gain awareness and

knowledge about the ways through which they can act in a pro-environmental way and promote sustainable development in society. It is important to remember that personal motivation to protect the environment is crucial when it comes to environmental education and awareness. Internal elements that influence a person's behaviour toward the environment include personality qualities that influence environmental behaviour as well as a person's interaction with nature.

A person who has a stronger urge to connect with nature looks for opportunities to spend as much time as possible outside. Nature draws them in and entices them to explore the countryside. Researchers have investigated the utility of being connected to nature as a predictor of pro-environmental behaviour, and several studies have established a strong correlation. When a person is environmentally conscious, they are more likely to act ethically, which is good for the environment and has positive consequences. Since we are talking about students, they can help the environment by taking certain steps, such as by recycling paper or by making material from waste plastic- as our research findings have demonstrated, there is a positive and significant relationship between environmental consciousness and pro-environmental behaviour.

Education institutions can assist students by encouraging them to adopt a green lifestyle, and by informing them of the negative effects of bad environmental conditions. They can also help students to create a green attitude that will aid in the beneficial growth of the environment. There has been similar research done, especially in Malaysia, in a similar context, where students from 72 training

centers were studied. The findings were like ours: Students are willing to make sacrifices and be environmentally committed, which further contributes to their pro-environmental behaviour (Yusliza *et al.*, 2020); they are willing to take certain actions, and even support environmental sustainability within their institutions, to show their commitment and concern toward the environment. The fact student would choose to enroll in universities with environmental awareness further highlights their belief in pursuing pro-environmental behaviour.

Another study with similar objectives was conducted in Taiwan amongst students, focusing on marine life sustainability. Like our findings, they discovered that environmental awareness and environmental consciousness allow an individual to pursue behaviour that is beneficial to the environment (Chen & Tsai, 2016). Environmental consciousness is the key that allows people to connect with nature and their surroundings; thus, as students are aware of the unfortunate issues presented by climate change and global warming, they are more inclined to take on pro-environmental behaviour.

4.1. Theoretical contribution

In a variety of ways, our study contributes to the corpus of knowledge. Several studies on environmental variables have been undertaken, but there is a gap because no educational sector in Pakistan focuses solely on environmental aspects with a sustainable environment in mind. To fill this gap in the literature, our research contributes to understanding how organizations can assist in achieving a sustainable environment, as well as how they can engage students in

environmental commitment, and how they can be environmentally conscious.

Our work contributes to the advancement of prior work in a broader sense. Furthermore, the new research broadens the scope of pro-environmental behaviour research and provides a framework for examining how students and organizations can adopt a green lifestyle and contribute to the long-term sustainability of the environment. Aside from that, our research will contribute to a better understanding of how environmental elements (environmental consciousness, green lifestyle, and green self-efficacy) contribute to pro-environmental behaviour enhancement. Our study mainly focuses on students, as they are the ones who can protect the environment in the future through their activities.

4.2. Practical implications

These studies have several implications for institutions and students who desire to see environmental factors implemented in their institutions to achieve a sustainable environment.

Organizations should invest in human capital and raise awareness of how students can practice environmental factors in their institutions, and how these will be beneficial for the environment; there should be a clear understanding of the environmental factors that have an impact on the students' behaviour. Organizations should create policies that predict pro-environmental behaviour- organizations can invest and introduce courses or subjects that motivate students so that they can change their habits and act according to pro-environmental behaviour.

Our research was mainly carried out on top management and students, so there should be proper evaluation systems in-

stalled that analyze students' behaviour to achieve a sustainable environment. There should also be proper systems that clearly explain how students will be evaluated based on their behaviour, an assessment that could be done bi-annually to observe and understand changes in behaviour, and so that feedback can be taken from management or students to show if they are on the right track or not. Students must be assessed, to develop capable candidates who can help mitigate environmental challenges and take the required steps to reduce harmful environmental effects (Shafiei & Maleksaedi, 2020).

Limitations of the Study

There were a few limitations present in our study, as we only focused on the undergraduate students of Pakistan in higher education, rather than all the students studying in various categories within their universities.

We also conclude that the scope of our research was considerably limited, as we only targeted universities in Lahore, and it could have been more widespread so as to get results that would more extensively provide an image of the role of sustainable development in all universities of Pakistan. We limited ourselves to group data that could be collected by a plethora of university students.

Conclusion

The importance of research related to environmental health has become significantly important, as the pressing dangers of human actions have further amplified the impact of global warming. This research paper contributes a further widespread perspective

on the already present literature on pro-environmental behaviour. Further, this study is one of few to have explored the relationship between green efficacy, green lifestyle, environmental consciousness, environmental commitment, and pro-environmental behaviour. Our research participants were from incredibly reputable universities of Lahore, and thus this research will prove useful for Higher Educational Institutions, enabling them to generate policies that promote environmental commitment so students can regularly pursue pro-environmental behaviour.

Pro-environmental behaviour amongst students in universities is highly important, as a positive behavioural change among youth allows for the possibility to reverse the damaging impact that has been done by climate change on our environment. In conclusion, High Educational Institutions can act as an integral element towards sustainable development through their curriculum and policies.

References

Ardoin, N., Heimlich, J., Braus, J., & Merrick, C. (2013). *Influencing Conservation Action: What research says about environmental literacy*. Behaviour and Conservation Results. Natural Audubon Society.

Aziz, A. A., Najmi, A., Kanapathy, K. (2021). Exploring consumer participation in environment management: Findings from two-staged structural equation modelling-artificial neural network approach, Corporate Social Responsibility and Environmental Management, John Wiley & Sons, vol. 28(1), pp. 184-195, January.

Batool, Z., Qureshi, R. H. (2007). Quality assurance manual: For higher education in assurance, accreditation and the recognition of qualifications in higher education assurance. A selection of papers from the 3rd European Quality Assurance forum. Retrieved from http://www.oecd.org.els.stats.edu_db/def_uoe2.htm

Bittar, A. D. V. (2018). Selling remanufactured products: Does consumer environmental consciousness matter? Journal of Cleaner Production, 181, 527–536.

Bonnett, M. (2016). Environmental consciousness, sustainability, and the character of philosophy of education. *Studies in philosophy and education*.

Chen, C. L., Tsai, C. H. (2016). Marine environmental awareness among university students in Taiwan: a potential signal for the sustainability of the oceans, Environmental Education Research, 22 (7), pp. 958-977.

Chen, Y. S., Chang, C. H., & Lin, Y. H. (2014a). The Determinants of Green Radical andIncremental Innovation Performance: Green Shared Vision, Green Absorptive Capacity, and Green Organizational Ambidexterity. *Sustainability*, *6*(11), 7787–7806.

Chen, Y. S., Chang, C. H., Yeh, S. L., & Cheng, H.-I. (2014b). Green shared vision and green creativity: the mediation roles of green mindfulness and green self-efficacy. *Quality & Quantity*, *49*(3), 1169–1184.

Dakhan, S. A. (2020). Impact of Green HRM on Employees Pro-Environmental Behaviour:Mediating Role of Women Environmental Knowledge at Higher Education Institutions. *IJCSNS Int. J. Comput. Sci. Netw. Secur, 20(12)*, 202-208.

Emas, R. (2015). *The Concept of Sustainable Development: Definition and Defining Principles*.

Festinger, L. (2012). Cognitive Dissonance | Britannica. In *Encyclopædia Britannica*.

Eren, B., Yaqub M. (2015). Environmental Consciousness Survey of University Students, Akademik Platform, / ISITES2015 Valencia -Spain.

Guo, L., Xu, Y., Liu, G., Wang T. (2019). Understanding Firm Performance on Green Sustainable Practices through Managers' Ascribed Responsibility and Waste Management: Green Self-Efficacy as Moderator. Sustainability. 2019; 11(18):4976. https://doi.org/10.3390/su11184976

Handoyo, A., & Rufaidah, P. (2012). Green Lifestyle Dimensions: An Empirical Study.

Harvey, J. A., Thakur, M. P., Ellers, J. (2021). The Tarnished Silver Lining of Extreme Climatic Events. Trends in Ecology & Evolution.

IPCC (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, WMO, UNEP, Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SummaryVolume.pdf

Iyer, P., Davari, A., & Paswan, A. (2016). Green products: Altruism, economics, price fairness and purchase intention. Social Business, 6(1), 39-64.

Jugert, P., Greenaway, K.H., Barth, M., Büchner, R., Eisentraut, S., & Fritsche, I. (2016). Collective efficacy increases pro-environmental intentions through increasing self-efficacy. Journal of Environmental Psychology, 48, 12-23.

Lang J.W, T. L. (2021). The science and practice of item response theory in organizations. *Annual review of organizational psychology and organizational behaviour*.

Lorenzen, J. A. (2012). Going Green: The process of lifestyle change. *Sociological forum*.

Mainieri, T., Barnett, E. G., Valdero, T. R., Unipan, J. B., & Oskamp, S. (1997). Green Buying:

The Influence of Environmental Concern on Consumer Behaviour. *The Journal of Social Psychology*, *137*(2), 189–204.

Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. Journal of Environmental Psychology, 24(4), 503–515. https://doi.org/10.1016/j.jenvp.2004.10.001

Naureen, S., & Lodhi, F. A. (2015). Higher Education in Pakistan: Challenges and Prospects. *Pakistan Perspective*, *20*(1).

Ozmen, H. (2006). Environmental consciousness and education relationship: Determination of how environment-based concepts are placed in Turkish science curricula January 2006Asia-Pacific Forum on Science Learning.

Panno, A. (2018). Mindfulness, Pro-environmental Behaviour, and Belief in Climate Change: The Mediating

Role of Social Dominance. *Environment and Behaviour*, *50*(8), 864–888.

Schultz, N. (2007). The constructive destructive reconstructive power of social norms. Pshycology science.

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

Ramus, C., Kilmer, A. (2007). The impact of initiatives on low carbon behaviours. Scottish Government. Retrieved from www.eatwellscotland.org

Shafiei, A., Maleksaeidi. H. 2020. Pro-environmental behaviour of university students: Application of protection motivation theory. Glob Ecol Conserv. DOI: 10.1016/j.gecco. 2020.e00908.

Tang, A. K. Y., Lai, K., & Cheng, T. C. E. (2016). A Multi-research-method approach to studying environmental sustainability in retail operations. *International Journal of Production Economics*, *171*(P3), 394–404.

UNDESD (2014). Buckler C., Creech, H., Shaping the Future We Want, UN Decade of Education for Sustainable Development (2005-2014), UNESCO https://sustainabledevelopment.un.org/content/documents/1682Shaping%20the%20future%20we%20want.pdf

Yusliza, M. Y. (2020). *Exploring the Interplay of Green Human Resource Management, Employee Green Behaviour, and Personal Moral Norms*.

Yusliza, M. Y., Amirudin, A., Rahadi, R. A., Nik Sarah Athirah, N. A., Ramayah, T., Muhammad, Z., Dal Mas, F., Massaro, M., Saputra, J., & Mokhlis, S. (2020). An Investigation of Pro-Environmental Behaviour and Sustainable Development in Malaysia. *Sustainability*, *12*(17), 7083.

Zheng, Y. (2010). Association analysis on pro-environmental behaviours and environmental consciousness in main cities of East Asia. Behaviourmetrika, 37(1), 55–69. https://doi.org/10.2333/bhmk.37.55