



A Study on the Relationship between Personality Traits and Pro-Environmental Behaviour among Young Adults

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Abstract: Environmental degradation continues threatening global sustainability, making individual behaviour critical. Understanding what drives environmentally responsible actions among young adults becomes essential. This study explores how Big Five personality traits relate to Pro-Environmental Behaviour in undergraduate students. Using standardized self-report questionnaires, researchers collected data from 151 undergraduates aged 17 to 27 years. The cross-sectional correlational design measured Conscientiousness, Agreeableness, Openness, Extraversion, Neuroticism, and Pro-Environmental Behaviour. Jamovi software enabled descriptive statistics and Pearson's product-moment correlation analysis. Three personality traits showed strong positive correlations with Pro-Environmental Behaviour. Conscientiousness correlated highest ($r = .79, p < .001$), followed by Agreeableness ($r = .74, p < .001$) and Openness ($r = .67, p < .001$). Students demonstrating responsibility, empathy, and receptiveness to new experiences engaged more frequently in environmentally responsible practices. Extraversion and Neuroticism revealed no significant relationships. These results illuminate how personality shapes environmental engagement. Responsible individuals follow through on sustainable actions. Empathetic students consider environmental impacts on others. Open-minded young adults embrace innovative eco-friendly practices. Individual differences in these traits explain varying levels of environmental commitment. The findings enable targeted interventions. Environmental education programs can adapt to personality profiles, maximizing effectiveness. Sustainability campaigns should emphasize responsibility, compassion, and intellectual curiosity. Designing personality-sensitive interventions could

substantially increase pro-environmental behaviour among young adults, advancing global sustainability goals through psychologically informed approaches

Keywords: *Personality Traits, Pro environmental Behaviour*

1. Introduction

Global Environmental Issues

Young adults hold particular significance in environmental protection efforts. Understanding the psychological factors that drive individuals to adopt pro-environmental behaviours becomes essential in this context. These behaviours—recycling, conserving energy, reducing waste, and using eco-friendly products—contribute substantially to environmental sustainability.

Individual actions remain a crucial element in environmental protection, even as government policies and technological innovations play essential roles in addressing environmental problems. International organizations, including the United Nations, have highlighted the importance of sustainable development and responsible environmental practices through various global initiatives.

The twenty-first century faces environmental degradation as one of its most serious global challenges. Climate change, pollution, biodiversity loss, and depletion of natural resources pose significant threats. Ecosystems suffer. Human well-being declines. These problems demand immediate attention and coordinated responses across all levels of society.

Significance of Pro-Environmental Behaviour Among Young Adults

Young adulthood shapes independence, identity, and values—a period when lifelong habits take root. University students encounter environmental education, social media campaigns, and sustainability movements regularly. Yet awareness doesn't guarantee action. Many young adults express concern for environmental problems but fail to practice responsible behaviours consistently. This disconnect reveals something deeper.

Psychological factors drive individual differences in environmental engagement. Youth activism has surged, with figures like Greta Thunberg inspiring ecological involvement. Still, the gap persists. Why do some young people translate concern into action while others don't? The answer lies beyond knowledge. During this critical developmental stage, attitudes form that persist throughout life. Understanding what separates the engaged from the aware requires examining internal motivations. Environmental education reaches young adults. Social movements influence them. But behaviour change demands more than exposure.

Influence of Personality Traits on Pro-Environmental Behaviour

Stable patterns of thoughts, emotions, and actions distinguish one individual from another. These patterns form personality, and personality traits provide a framework for understanding why people behave differently toward the environment. The Big Five model organizes these traits into five dimensions: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

How individuals perceive environmental issues depends partly on their personality. So does how they respond emotionally to ecological threats. And so does whether they translate beliefs into action. Curiosity and creativity characterize those high in Openness to Experience. They readily accept scientific information. They adopt innovative sustainable practices more willingly. Responsibility and self-discipline define conscientious individuals. They engage consistently in recycling and energy conservation. Empathy and concern for others mark agreeableness. This trait increases sensitivity to collective consequences of environmental harm, promoting environmental responsibility. Extraversion and Neuroticism produce more complex effects. Social situations shape their influence. Emotional responses vary. Their impact on environmental behaviour remains less predictable.

Theoretical Perspective

The relationship between personality and pro-environmental behaviour can be explained through psychological theories such as the Theory of Planned Behaviour. This theory suggests that attitudes, subjective norms, and perceived behavioural control influence behavioural intentions. Personality traits may shape these components by affecting how individuals evaluate environmental issues, perceive social expectations, and assess their ability to engage in sustainable actions.

1.1 Research Gap

Although previous research has established significant associations between Big Five personality traits and pro-environmental behaviour, most empirical evidence has been derived from Western populations. Meta-analytic findings indicate variability in effect sizes across countries, suggesting that cultural context may influence personality–behaviour relationships (Soutter et al., 2020). Additionally, research examining the role of cultural values highlights that environmental attitudes and behaviours are shaped by sociocultural norms, yet non-Western populations remain underrepresented in empirical studies (Chwialkowska et al., 2020). Consequently, there is limited correlational evidence examining the relationship between the Big Five personality traits and pro-environmental behaviour in Indian emerging adults. The

present study aims to address this gap by investigating these associations within an Indian sample aged 17–27 years.

2. Review of Literature

Markowitz et al. (2011) performed a study examining the personality traits of individuals who consistently engage in behaviours that support the environment. This research, which employed comprehensive personality assessments and large community samples, revealed a notable correlation between environmentally friendly actions and characteristics such as agreeableness, honesty-humility, and openness to new experiences. In particular, humility and honesty, linked to fairness and sincerity, emerged as strong predictors. The authors, including Kibeom Lee, asserted that moral values and openness to new ideas are vital for promoting sustainable behaviour. These findings highlight the importance of personality traits in understanding environmental involvement.

Lisboa et al. (2024) explored the connections between personality traits, emotional intelligence, and pro-environmental behaviour (PEB) among teenagers in this systematic review. The authors noted that ecologically conscious behaviours are positively associated with traits such as agreeableness, conscientiousness, and openness. Additionally, heightened emotional intelligence, encompassing emotional awareness, empathy, and regulation, correlates with increased environmental concern and engagement. However, the ability to draw causal conclusions is limited, as most of the studies included are correlational. The review calls for longitudinal and experimental studies to enhance the existing body of evidence and underscores the importance of psychological factors in shaping adolescents' sustainable behaviours.

Pino et al. (2024) carried out a study that expands upon earlier research by highlighting the importance of sustainable behaviour in influencing individual well-being. These findings align with a growing emphasis on eco-behavioural pathways within well-being research and are in accordance with Self-Determination Theory. Personality traits are recognized as significant predictors of individual flourishing in the realm of psychological well-being research; however, the mechanisms that connect these traits to well-being outcomes remain inadequately understood. Recent studies suggest that pro-environmental behaviours (PEBs) may serve as a mediator between personality and well-being outcomes, as they fulfil essential needs for relatedness, competence, and autonomy. Empirical evidence indicates that agreeableness, in particular, is positively associated with both eudaimonic well-being and PEBs.

Tucholska et al. (2024) explored the connection between adult personality traits, time perspective, cognitive perceptions regarding climate change, emotional responses such as climate anxiety, and pro-environmental behaviours. Their results, which suggest that both enduring traits and time orientation influence environmental engagement, underscore the importance of integrating cognitive, emotional, and temporal psychological dimensions to enhance the prediction of climate-relevant behaviours. To comprehend how individuals think and act concerning climate change, research into the psychological factors that affect pro-environmental behaviour stresses the relevance of personality and temporal perspectives. Prior studies have shown a link between pro-environmental attitudes and behaviours and the Big Five personality traits, particularly openness and conscientiousness. Additionally, a long-term perspective has been correlated with a greater adoption of sustainable practices.

Markowitz et al. (2012) examined the connections between pro-environmental behaviours and significant personality traits across various samples. Their findings indicate that individuals exhibiting high levels of curiosity and openness are more inclined to engage in sustainable practices, as Openness to Experience consistently shows somewhat positive correlations with a range of environmentally conscious activities. This research underscores the significance of trait-based methodologies in environmental psychology and contributes to the existing literature that associates the Big Five personality dimensions with actual behaviours. Personality traits have emerged as increasingly vital predictors in investigations of the psychological factors that affect environmental behaviour. While prior studies have identified social-psychological and demographic factors related to pro-environmental behaviour, there has been a lack of comprehensive examination regarding the impacts of broad personality characteristics.

Li et al. (2022) built upon the findings that environmental values serve as a strong predictor of individuals' pro-environmental behaviour (PEB), as indicated by previous research, although the underlying mechanisms of this relationship remain inadequately understood. By exploring the mediating effects of risk perception and moral outrage in linking environmental values to PEB among young adults, their results, grounded in the values-belief-norm theory, reveal that elevated environmental values directly predict increased engagement in PEB. Furthermore, this relationship is indirectly mediated by both intensified moral emotions concerning environmental damage and a heightened perception of environmental risks. This study highlights the role of emotional processes as crucial motivators for sustainable actions and contributes to earlier investigations into the cognitive and affective dimensions of PEB.

Wallis and Loy (2021) expand on this research by examining the factors that influence youth (13-25 years old) to join the Fridays for Future climate advocacy movement. The focus of research on pro-environmental conduct has progressively moved from individual consumer behaviour to civic and collective forms of engagement, especially among young people. Prior research highlights psychological factors such as social identity, environmental ideals, and norms as indicators of sustainable behaviour. The main determinants of young participation in climate protests, according to survey data from demonstrators and a larger panel, are strong personal norms, identification with fellow activists, and perceived activism among peers. These results, which emphasize the relevance of social and individual psychological elements in explaining pro-environmental civic involvement, are consistent with social identity and personal norm theories.

Muffato et al. (2025) build upon this research by examining both fundamental personality traits and specific dispositions, such as attitudes towards outdoor exploration and affinity for nature. Prior research on pro-environmental behaviour has underscored the importance of personality traits, particularly conscientiousness, agreeableness, and openness, in forecasting ecological actions. Nevertheless, there is limited understanding of how environmental dispositions affect these behaviours. In a study involving 649 participants, their results indicate that connectivity to nature exhibits stronger correlations across various activities, while openness and conscientiousness are linked to particular pro-environmental domains (such as commuting and purchasing). Furthermore, recent findings reveal that positive attitudes towards environmental exploration correlate with citizenship and consumer behaviour, highlighting the intricate influence of personal dispositions that extend beyond traditional trait evaluations on sustainable actions.

Krettenauer, Lefebvre, and Goddeeris (2024) undertook a study to advance this work by exploring the combined prediction of pro-environmental behaviour (PEB) over time in children, based on the endorsement of pro-environmental norms and closeness to nature. The existing body of research on PEB emphasizes the importance of psychological factors, including environmental values, social norms, and a sense of connection to nature, in comprehending individuals' sustainable behaviours. Previous studies have demonstrated that social norms affect intentions and actions related to environmental protection, and that a strong emotional bond with the natural world enhances the likelihood of engaging in PEBs. Their findings align with theoretical frameworks suggesting that the development and persistence of pro-environmental behaviours during adolescence are shaped by both normative beliefs and an internalized environmental identity.

Scopelliti et al. (2022) examine how the ecological values, environmental concerns, attitudes towards the environment, and identities of young individuals are influenced by their parents' ecological values. While the role of socialization processes and personal values has been highlighted in studies on pro-environmental behaviour (PEB), the intergenerational transmission of ecological values has not been extensively explored. This study aims to address this gap, ultimately impacting PEB. It demonstrates how parental influence shapes the environmental perspectives and behaviours of young adults by utilizing theoretical frameworks such as value-belief-norm theory. The results underscore the importance of early socialization in fostering sustainable behaviours across generations and support a psychological mechanism that connects ecological principles imparted at home to increased environmental engagement.

Giancola et al. (2023) explore the interaction between the Big Five personality traits and divergent thinking (DT), a cognitive process indicative of creativity, in relation to PEB during late adolescence. The findings suggest that agreeableness, openness, and extraversion have an indirect effect on PEB through the creativity associated with DT, implying that creative cognitive styles enhance teenagers' likelihood of engaging in environmentally friendly behaviours. Research on pro-environmental behaviour (PEB) indicates that personality traits are significant intrapersonal factors influencing sustainable actions. Openness to experience is frequently found to correlate positively with ecologically responsible behaviours. Building upon this existing research, this study integrates cognitive and personality dimensions, emphasizing the importance of both stable traits and innovative problem-solving skills in developing environmentally conscious behaviours during a critical developmental phase.

Davignon et al. (2023) investigated whether involvement in structured activities during adolescence (such as sports, cultural, and prosocial activities) predicts adult PEB through the development of pro-environmental attitudes, building on research that links organized adolescent involvement with active citizenship outcomes. Attitudes are a significant predictor of subsequent sustainable action, according to research on the developmental roots of pro-environmental behaviour (PEB).. They discovered that participation in cultural activities as a teenager positively predicted pro-environmental views in emerging adulthood, which in turn predicted increased pro-environmental behaviours at age 30, using longitudinal data spanning 17 years. This study emphasizes attitudes as a persistent mediator in the development of adult environmental participation, highlighting the influence of early social experiences in forming environmental attitudes and future behaviours.

Palupi and Sawitri (2018) although there has been an increase in study on pro-environmental behaviour (PEB), there are still few studies that especially target teens. By

analyzing the research on PEB among high school and college students and highlighting its importance for environmental preservation, fill this gap. Based on theoretical frameworks like the Value-Belief-Norm (VBN) model and the Theory of Planned Behaviour (TPB), the authors emphasize how behavioural intentions, attitudes, and subjective norms affect adolescents' participation in environmentally conscious behaviour. Their analysis highlights the need for educational interventions that promote environmental awareness and sustainable practices among young people by indicating that teenagers with strong environmental knowledge and critical thinking abilities are more likely to adopt eco-friendly activities. The significance of early pro-environmental participation for development is reaffirmed by this investigation.

Ojedokun (2018) though few studies concentrate on youth populations, research on pro-environmental behaviour (PEB) has found personality to be a strong psychological predictor of sustainable action. By investigating the relationship between the Big Five personality traits and various aspects of environmental citizenship behaviour (eco-initiatives, eco-helping, and eco-civic participation) in Nigerian university students, adds to this body of knowledge. The findings show that proactive environmental behaviours are substantially correlated with agreeableness and openness to new experiences, while other behaviour characteristics are influenced by conscientiousness, extraversion, age, and gender. These results are consistent with other studies that linked personality factors including conscientiousness, agreeableness, and openness to pro-environmental engagement, so confirming the significance of stable individual variations in predicting young adults' environmentally conscious conduct.

Gifford and Nilsson (2014) offer a thorough analysis of the societal and personal factors that influence pro-environmental behaviour and concern, emphasizing its complexity. In addition to social influences like norms, religion, and cultural differences, the authors list eighteen categories of influence, including individual characteristics like personality, values, education, sense of control, and cognitive biases. They stress that environmental concern and behaviours are shaped by the interaction of personality traits, values, and situational situations. They propose that an integrated approach, rather than relying solely on separate predictors, is necessary to comprehend pro-environmental behaviour. The intricacy of contextual and psychological variables is emphasized in this review, which also urges further investigation into the ways in which these elements interact and moderate one another to determine sustainable behaviour.

Osborne and Blake (2022) conduct a systematic evaluation of research on the relationship between climate change literacy and environmental knowledge and people's willingness to take sustainable action. Environmental education research repeatedly

demonstrates that pro-environmental behaviour (PEB) is significantly predicted by ecological literacy and understanding. According to their synthesis, information by itself usually does not result in consistent pro-environmental results, even though cognitive comprehension is frequently required for behaviour change. Rather, the relationship between knowing and behaviour is strengthened by affective and sociocultural elements, including identity, emotional engagement, social norms, and self-efficacy. This review emphasizes the importance of education that combines values and emotions with factual content, which is consistent with a larger body of research that suggests PEB results from a confluence of cognitive, affective, and contextual factors rather than knowledge alone.

Ojalehto, Medin, and Haidet (2018) examine data demonstrating how cultural worldviews, such as individualism versus communitarianism and hierarchical versus egalitarian social orientations, affect people's perceptions of risk, environmental concern, and readiness to adopt sustainable activities. Research on pro-environmental behaviour (PEB) is beginning to acknowledge the influence of cultural cognition and worldview on how people interpret and respond to environmental concerns. According to their conclusion, cultural framing influences attitudes toward environmental dangers as well as how scientific data and social norms related to PEB are interpreted. By emphasizing how culture influences the cognitive and affective factors that determine environmental involvement, this viewpoint enhances trait-based and value-based methods and emphasizes the necessity of context-sensitive models in environmental psychology.

Gatersleben et al. (2014) look at how identity and values predict PEB, emphasizing that attitudes by themselves frequently only account for particular behaviours. Researchers are now looking beyond sentiments into more stable personal characteristics in order to understand what motivates pro-environmental behaviour (PEB).. Through secondary analyses of three UK groups (total N = 2,694), the authors discover that a variety of environmentally conscious behaviours are significantly predicted by both identities and values. Significantly, identities explain more variance in PEB than attitudes, and in two investigations, identification completely controlled the association between behaviour and values. These results imply that pro-environmental identities may be crucial to encouraging sustainable behaviours and that identity may be a more comprehensive concept that incorporates values.

Hidalgo-Crespo et al. (2023) expand the Value-Belief-Norm (VBN) theory. According to their research, personality qualities like agreeableness and conscientiousness may strengthen internalized values and subjective norms that result in sustainable actions. This suggests that personality traits have an impact on the motivational and normative pathways that underlie

PEBs, psycho-social frameworks have been used to study the adoption of pro-environmental behaviours (PEBs) in great detail, but personality factors have not been fully incorporated into these models. By analyzing how the Big Five personality traits, openness, extraversion, neuroticism, agreeableness, and conscientiousness, interact with value, belief, and normative constructs to predict three different PEBs, waste prevention, green consumption, and avoidance behaviours. By emphasizing the psychological processes by which stable individual differences influence environmentally conscious behaviour, this paper adds to the body of literature.

Alfirević et al. (2024) expand on research that links prosocial engagement to sustainable actions. Their serial mediation research, which included data from 530 undergraduate students, shows that prosocial attitudes might indirectly promote environmental attitudes and behaviours, indicating spillover effects where environmental protection commitment is linked to assisting others. These results highlight the potential of using prosocial orientations in education and policy to advance sustainable development and are consistent with more general evidence that values and incentives underlie both social and ecological participation. According to the body of research on pro-environmental behaviour (PEB), social motivations and attitudes are important indicators of people's involvement with environmental issues. By examining the psychological processes that link prosocial attitudes and behaviours with environmental participation in young adults,

López-Bonilla et al. (2020) add to this body of knowledge. Research on tourism sustainability is increasingly concentrating on how individual traits influence eco-friendly travel behaviours. By examining the ways in which personal characteristics interact to influence pro-environmental behaviour among golf tourists, with a focus on gender differences, The study, which draws on behavioural and sociopsychological models, concludes that gender, environmental beliefs, and individual characteristics all influence people's propensity to travel in an environmentally responsible manner. This work is consistent with broader sustainability research that demonstrates the importance of intrapersonal factors, not just knowledge or norms, in promoting pro-environmental behaviour outside of everyday settings. This extends understanding into the context of sustainable tourism practices and tourist decision-making.

Soutter, Bates, and Möttus (2020) conducted a comprehensive meta-analysis examining the relationship between the Big Five and HEXACO personality traits and pro-environmental attitudes and behaviours. Drawing from 38 independent samples ($N \approx 44,000$), the study found that openness to experience and honesty–humility showed the strongest positive associations with pro-environmental outcomes, while agreeableness and conscientiousness demonstrated

smaller but significant relationships. Extraversion showed weak associations, and neuroticism was largely unrelated. Importantly, the authors reported substantial heterogeneity in effect sizes across studies. Sample characteristics, including country of origin, partly explained this variation, suggesting that cultural context may influence personality–behaviour relationships. However, most included studies were conducted in Western populations, limiting generalizability. The authors highlighted the need for further research across diverse cultural contexts to clarify whether established personality–pro-environmental behaviour associations remain consistent in non-Western societies.

Chwialkowska, Bhatti, and Glowik (2020) examined the role of cultural values in shaping pro-environmental behaviour. The authors argued that cultural dimensions such as individualism–collectivism, uncertainty avoidance, and long-term orientation influence environmental attitudes and actions. Their review suggested that cultural value systems affect how individuals interpret environmental responsibility, social norms, and collective action. However, the study noted that much of the empirical research on pro-environmental behaviour has been conducted in Western, high-income countries, with limited representation from developing or non-Western contexts. The authors emphasized that environmental behaviour cannot be fully understood without considering cultural influences, yet empirical evidence across diverse national populations remains insufficient. They called for more cross-cultural investigations to determine whether psychological predictors of pro-environmental behaviour operate similarly across societies, highlighting the importance of context-specific research in understudied regions.

3. Methodology

3.1 Aim of the Study

The objective of the current study was to investigate the correlation between personality traits (Conscientiousness, Agreeableness, Openness, Extraversion, and Neuroticism) and Pro-Environmental Behaviour among undergraduate students.

3.2 Research Objective

The main goal of this study is to explore the connection between the Big Five personality traits and Pro-Environmental Behaviour in undergraduate students, as well as to evaluate the level of Pro-Environmental Behaviour in young adults.

3.3 Hypothesis

H1: A significant relationship exists between Conscientiousness and Pro-Environmental Behaviour among university students.

H2: A significant relationship exists between Agreeableness and Pro-Environmental Behaviour among university students.

H3: A significant relationship exists between Openness to Experience and Pro-Environmental Behaviour among university students.

H4: A significant relationship exists between Extraversion and Pro-Environmental Behaviour among university students.

H5: A significant relationship exists between Neuroticism and Pro-Environmental Behaviour among university students.

3.4 Research Design

The study utilized a cross-sectional correlational research design. This approach was employed to evaluate the extent and direction of the relationship between personality traits and Pro-Environmental Behaviour at a single moment in time, without any manipulation of variables.

3.5 Nature of the Research Design

The research design was characterized as quantitative and non-experimental. Data were gathered through standardized self-report questionnaires and analyzed using statistical methods. Given that no independent variable was manipulated and participants were not assigned to experimental groups, the study maintained an observational nature.

3.6 Sample

The sample for this study consisted of 151 undergraduate students aged between 17 and 27 years, enrolled in various academic programs at Amity University, Noida, and nearby institutions. Participants were chosen using the convenience sampling method via online platforms such as WhatsApp, email, and social media, as well as through limited in-person approaches.

Participation in the study was voluntary. Only students who provided informed consent and fully completed the questionnaire were included in the final sample. Responses that were either incomplete or inconsistent were excluded from the analysis.

3.7 Sample Size

A total of approximately 180-200 students were invited to participate in the study, from which 151 valid responses were obtained and utilized for statistical analysis. This sample size was deemed adequate for correlational research at the undergraduate level and sufficient to identify moderate to strong relationships between variables. The sample size is also comparable to that of similar studies conducted on college populations.

3.8 Procedure

Data were collected through an online survey administered via Google Forms. The questionnaire link was disseminated to potential participants through WhatsApp, email, Instagram, and other social media platforms. Additionally, some responses were gathered through direct in-person requests. Before accessing the questionnaire, participants were presented with an informed consent form that outlined the purpose and nature of the study. Only those who consented to participate were permitted to proceed. Participants were required to complete four sections: informed consent, demographic details, a personality traits questionnaire, and a Pro-Environmental Behaviour scale. The questionnaire took approximately 8-10 minutes to complete. After data collection, responses were automatically stored in Google Sheets and subsequently exported to Jamovi software for analysis. The data were screened for completeness and accuracy prior to statistical processing.

3.9 Ethical Considerations

The present study strictly adhered to ethical guidelines for psychological research involving human participants. Prior approval was obtained from the relevant authorities of Amity University, Noida.

Participants were informed about the voluntary nature of their involvement and their right to withdraw at any time without facing any penalties. Confidentiality and anonymity were guaranteed, and no personal identification information was collected.

All data were used solely for academic and research purposes. Participants were assured that their responses would be kept secure and would not be disclosed to any unauthorized person.

3.10 Statistical Analysis

Data analysis was performed utilizing Jamovi statistical software. Before the analysis, the data were examined for any missing values and errors. Descriptive statistics, which included means, standard deviations, minimum and maximum values, skewness, and kurtosis, were computed to summarize the characteristics of the variables and evaluate normality. Pearson's product-moment correlation coefficient was employed to investigate the relationship between Pro-Environmental Behaviour and the five personality traits. Degrees of freedom and significance levels were documented. All statistical tests were conducted as two-tailed, with the significance level established at $p < .05$.

3.11 Limitations and suggestions for future research

Despite its contributions, the current study has several limitations that should be taken into account when interpreting the results.

Firstly, the study utilized a cross-sectional correlational design, which restricts the ability to make causal inferences. While significant associations were identified, it cannot be concluded that personality traits directly influence pro-environmental behaviour. Future research may consider employing longitudinal or experimental designs to investigate causal relationships and developmental trajectories.

Second, the sample was selected using convenience sampling and consisted primarily of undergraduate students from a limited geographical region. This restricts the generalizability of the findings to other populations, such as older adults, working professionals, or individuals from different cultural backgrounds. Future research should employ probability sampling techniques and include more diverse samples.

Third, all measures were based on self-report questionnaires, which are susceptible to social desirability bias and response distortion. Participants may have overestimated their environmentally responsible behaviour to present themselves favourably. Future studies may incorporate behavioural observations, peer ratings, or objective indicators to improve measurement validity.

Fourth, the present research focused exclusively on personality traits as predictors of pro-environmental behaviour. Other relevant variables, such as environmental attitudes, subjective norms, environmental knowledge, values, and institutional support, were not included. Future research should adopt integrative models combining personality, motivational, and contextual factors (Gifford & Nilsson, 2014; Osborne & Blake, 2022). Additionally, future studies may explore mediating and moderating mechanisms, such as environmental identity, moral norms, and behavioural intentions, to better understand how personality influences sustainable behaviour. Cross-cultural and comparative studies may also provide valuable insights into the role of sociocultural context.

4. Results

Table 1: *Correlation Matrix*

Variable	PEB	Conscientiousness	Agreeableness	Openness	Extraversion	Neuroticism
(PEB)	—					
Conscientiousness	.792***	—				
Agreeableness	.735***	.746***	—			
Openness	.671***	.621***	.706***	—		
Extraversion	.117	.150	.132	.128	—	
Neuroticism	.015	.101	.031	.094	.011	—

*** = $p < .001$

PEB = Pro-Environmental Behaviour

Table 1 presents the Pearson correlation coefficients that illustrate the relationship between Pro-Environmental Behaviour and the five personality traits.

Pro-Environmental Behaviour demonstrated a strong positive correlation with Conscientiousness ($r = .792$, $p < .001$), suggesting that students who exhibit greater organization, responsibility, and discipline are more inclined to participate in environmentally friendly actions.

In a similar vein, Pro-Environmental Behaviour was also found to have a strong and positive correlation with Agreeableness ($r = .735$, $p < .001$), indicating that students who are cooperative, empathetic, and socially responsible are likely to display higher levels of ecological behaviour.

A noteworthy positive correlation was identified between Pro-Environmental Behaviour and Openness ($r = .671$, $p < .001$), which implies that students who are receptive to new ideas and experiences are more predisposed to engage in sustainable practices.

Conversely, Extraversion exhibited a weak and non-significant correlation with Pro-Environmental Behaviour ($r = .117$, $p > .05$), indicating that sociability and an outgoing disposition do not significantly affect environmental actions.

Likewise, Neuroticism showed a minimal and non-significant correlation with Pro-Environmental Behaviour ($r = .015$, $p > .05$), suggesting that emotional instability and anxiety do not correlate with eco-friendly behaviour in this particular sample.

In summary, the findings suggest that Conscientiousness, Agreeableness, and Openness serve as significant personality predictors of Pro-Environmental Behaviour, while Extraversion and Neuroticism do not have a substantial impact.

5. Discussion

The current study sought to investigate the connection between the Big Five personality traits and Pro-Environmental Behaviour among undergraduate students. The results revealed that Conscientiousness, Agreeableness, and Openness to Experience were significantly and positively correlated with pro-environmental behaviour, whereas Extraversion and Neuroticism did not show significant relationships. These findings reinforce the notion that personality traits are crucial psychological determinants of environmentally responsible actions among young adults.

The strong positive correlation between Conscientiousness and Pro-Environmental Behaviour indicates that individuals who exhibit organization, discipline, and responsibility are more inclined to participate in consistent sustainable practices.

Conscientious students are likely to adhere to environmental guidelines, conserve resources, and cultivate long-term eco-friendly habits due to their profound sense of duty and self-regulation.

This observation is in line with prior research that shows conscientiousness as a predictor of responsible and health-promoting behaviours (Elizabeth Markowitz et al., 2011; Ojedokun, 2018). Agreeableness has also been identified as having a strong and positive connection to pro-environmental behaviour.

Individuals who score high in agreeableness are characterized by empathy, cooperation, and concern for others, which may extend to their commitment to environmental protection and intergenerational welfare.

Such individuals are likely to be more motivated to adopt sustainable practices because they prioritize social harmony and collective well-being.

This finding is consistent with earlier studies that emphasize the significance of prosocial orientation in environmental engagement (Alfirević et al., 2024; Gatersleben et al., 2014).

Openness to Experience has shown a notable positive association with pro-environmental behaviour. Individuals who are high in openness tend to be curious, imaginative, and open to new information. They may be more inclined to accept scientific evidence regarding climate change and environmental degradation, as well as to explore innovative sustainable practices. This outcome supports previous research linking openness with environmental concern and ecological participation (Robert Gifford & Nilsson, 2014; Tucholska et al., 2024). Conversely, Extraversion did not reveal a significant relationship with pro-environmental behaviour. This implies that sociability and assertiveness alone may not drive environmentally responsible actions. Extraverted individuals might prioritize social interactions over environmental issues, and ecological participation (Robert Gifford & Nilsson, 2014; Tucholska et al., 2024).

In contrast, Extraversion did not show a significant correlation with pro-environmental behaviour. This indicates that traits such as sociability and assertiveness may not necessarily drive environmentally responsible actions. Individuals who are extraverted might place a higher value on social interactions than on environmental issues, and their actions could be more swayed by situational influences rather than by ingrained ecological principles. Likewise, Neuroticism did not exhibit a significant link to pro-environmental behaviour, suggesting that

emotional instability, anxiety, and mood variations may not have a direct impact on sustainable practices within this group. Similar results have been documented in previous research, which also found weak or inconsistent relationships between these personality traits and environmental behaviours (Olalekan Ojedokun, 2018; Markowitz et al., 2012).

The notable intercorrelations identified among Conscientiousness, Agreeableness, and Openness imply that these adaptive personality traits frequently coexist in young adults. Those who possess this combination of traits may be especially likely to adopt environmental values and manifest them through consistent behaviours. This aligns with theoretical frameworks that highlight the interplay of various personality dimensions in influencing sustainable actions (Hidalgo-Crespo et al., 2023).

In summary, the findings lend empirical support to the study's hypotheses concerning the positive impact of Conscientiousness, Agreeableness, and Openness on pro-environmental behaviour. The outcomes are in line with personality-based and social-psychological theories, which suggest that stable individual characteristics shape attitudes, intentions, and behaviours relevant to the environment (Ajzen, 1991; Gifford & Nilsson, 2014).

5.1 Limitations And Suggestions For Future Research

Despite its contributions, the current study has several limitations that must be taken into account when interpreting the results.

First, the study utilized a cross-sectional correlational design, which restricts the capacity to make causal inferences. While significant associations were identified, it cannot be asserted that personality traits directly lead to pro-environmental behaviour. Future research could employ longitudinal or experimental designs to investigate causal relationships and developmental trajectories.

Second, the sample was chosen through convenience sampling and primarily consisted of undergraduate students from a restricted geographical area. This limits the generalizability of the findings to other demographics, such as older adults, working professionals, or individuals from diverse cultural backgrounds. Future studies should utilize probability sampling methods and include a broader range of participants.

Third, all measures relied on self-report questionnaires, which are prone to social desirability bias and response distortion. Participants may have inflated their environmentally responsible behaviour to appear more favourable. Future research could integrate behavioural observations, peer evaluations, or objective measures to enhance measurement validity.

Fourth, the current research concentrated solely on personality traits as predictors of pro-environmental behaviour. Other pertinent variables, such as environmental attitudes,

subjective norms, environmental knowledge, values, and institutional support, were not considered. Future studies should implement integrative models that combine personality, motivational, and contextual factors (Gifford & Nilsson, 2014; Osborne & Blake, 2022).

Moreover, future research may investigate mediating and moderating mechanisms, such as environmental identity, moral norms, and behavioural intentions, to gain a deeper understanding of how personality affects sustainable behaviour. Cross-cultural and comparative studies may also yield valuable insights into the role of social cultural context.

6. Conclusion

The current research investigated the connection between the Big Five personality traits and Pro-Environmental Behaviour in undergraduate students. The results indicated that Conscientiousness, Agreeableness, and Openness to Experience serve as significant positive predictors of environmentally responsible behaviour, while Extraversion and Neuroticism do not show a significant correlation with pro-environmental actions.

These findings underscore the significance of personality factors in elucidating individual variations in environmental engagement. Students who exhibit responsibility, empathy, and openness to new experiences are more inclined to adopt and sustain sustainable practices. The results corroborate prior studies that highlight the influence of stable personality traits on ecological behaviour (Markowitz et al., 2011; Ojedokun, 2018).

The research carries important practical implications for environmental education and intervention strategies. Educational institutions and policymakers could develop personality-sensitive awareness programs that foster responsibility, collaboration, and openness regarding environmental concerns. Initiatives focused on enhancing self-discipline, empathy, and critical thinking may prove particularly effective in promoting sustainable behaviour among young adults.

From a theoretical standpoint, the study adds to the expanding body of literature on the psychological determinants of pro-environmental behaviour by reaffirming the significance of personality variables. Integrating personality traits into environmental psychology frameworks may improve the efficacy of policy and behavioural interventions.

In summary, comprehending personality-based differences in environmental engagement can aid in the creation of more targeted and effective sustainability initiatives. By acknowledging individual characteristics, educators, psychologists, and policymakers can encourage long-term pro-environmental behaviour and contribute to ecological well-being.

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