

The Impact of Pro-Environmental Behavior on Student Well-Being

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ABSTRACT

The magnitude of environmental degradation currently poses a significant threat to humanity. In response, some elementary schools have adopted the Adiwiyata program, which fosters pro-environmental behaviors. Beyond the preservation of nature, pro-environmental behaviors are pivotal in ensuring the well-being of individuals within their environment. Student wellbeing is a critical component of student development, impacting the optimization of all aspects of development and consequently affecting learning outcomes and student development at school. In light of this, the present study aims to ascertain the effect of pro-environmental behavior on student wellbeing, employing quantitative survey research methods. The study's sample comprised 100 students in grade 5, and the research data collection technique involved documentation, observation, and questionnaires with a Likert scale. The collected data were then subjected to regression analysis, a statistical method used to study the relationship between variables. The findings of the study indicated a significant influence of pro-environmental behavior on student wellbeing, with an R-squared value of 0.308. This suggests that pro-environmental behavior contributes to 30.8% of the variability in student wellbeing, while the remaining 69.2% is influenced by factors not included in the study or by the term non-determination coefficient. Consequently, enhancing educational quality necessitates not only the improvement of facilities and infrastructure, but also the promotion of student welfare and environmental stewardship. This entails empowering students to transition from passive recipients of education to active participants in the educational process, thereby facilitating optimal learning conditions and attaining achievements that will redound to their benefit, particularly from the elementary school level onward. Future research should explore other aspects, such as economic status and community influence.

Keywords: Adiwiyata school, pro environmental behavior, student wellbeing, primary school

INTRODUCTION

The environment is defined as a unified space encompassing all objects, forces, conditions, and living things—including humans and their behavior—that collectively impact the sustainability of life and the welfare of humans and other living beings (Nuryadin & Bakar, 2017). The magnitude of environmental degradation represents a significant threat to humanity in the present era. However, it is imperative to recognize that environmental damage is not solely attributed to natural destruction; human activity is a contributing factor. The proliferation of environmental challenges, largely attributable to anthropogenic activities, has precipitated alterations in prevailing environmental conditions. Indonesia, a nation with a multitude of environmental concerns, including floods, landslides, water scarcity, pollution, and forest degradation, exemplifies the pervasive challenges confronting the nation (BNPB, 2023). The adverse environmental impacts are frequently attributable to anthropogenic activities, where humans, as Earth residents, are the primary agents of environmental degradation, consequently experiencing the adverse consequences (Shadiqi et al., 2013).

The contemporary environment is confronted with numerous challenges, many of which are escalating over time, resulting in a genuine environmental crisis. Consequently, endeavors to enhance awareness emerge as a pivotal undertaking, particularly in fortifying the individual-level connection with nature (Sulfa et al., 2024). Connectedness to nature signifies an individual's sentiment regarding the bond between self and nature,

encompassing cognitions, emotions, and behaviors (Hatty et al., 2020). Numerous studies have demonstrated that a connection with nature confers numerous benefits to human health and well-being, including the alleviation of stress, the enhancement of mood, the fortification of the immune system, and the promotion of environmentally sustainable behaviors (Kövi et al., 2023). Every human being is a leader on this earth and is the only intelligent being who should be obliged to maintain and maintain the balance of nature and environmental sustainability. Therefore, it requires behavior to protect the environment, which can be interpreted as pro-environmental behavior or called Pro Environmental Behavior (PEB) (Palupi & Sawitri, 2017).

Pro-environmental behavior (PEB) is defined as the actions taken by individuals who prioritize environmental well-being. These actions may include reducing environmental damage or preserving the environment (Mkumbachi et al., 2020). Pro-environmental behavior can be categorized into several distinct actions, including recycling, purchasing eco-friendly products, conserving energy, and opting for environmentally-friendly transportation options such as walking or cycling instead of driving (Putra, 2019). Individuals who possess a profound connection with nature exhibit a propensity for engaging in practices that support environmental preservation, such as recycling and conserving resources (Martin et al., 2020). Pro-environmental behavior (PEB) is not an innate quality; rather, it is cultivated through a process of learning, education, and training (Shadiqi et al., 2013). PEB encompasses a range of actions designed to reduce environmental damage and enhance its quality (Lin & Wei, 2023). These actions encompass a broad spectrum, ranging from simple practices such as recycling and conserving water, to more substantial lifestyle choices including the adoption of renewable energy sources and the purchase of environmentally friendly products. The impact of these behaviors extends beyond the immediate environment, profoundly influencing numerous aspects of social and human well-being (Zawadzki et al., 2020). Pro-environmental behavior encompasses a wide array of dimensions, including energy conservation, mobility and transportation, waste avoidance, consumerism, recycling, and vicarious social behavior towards conservation (Febriyanti, 2019; Kaiser, 1999). In the context of society, pro-environmental behavior can be regarded as a form of environmental protection or appreciation for a healthy environment (Krajhanzl, 2010). Education has been identified as a significant factor in promoting pro-environmental behavior (Blankenberg & Alhusen, 2019). Consequently, environmental education that incorporates pro-environmental behaviors should be a fundamental component of school curricula, particularly in institutions that have adopted elements based on pro-environmental principles. This is a critical aspect that has the potential to raise awareness of environmental care behavior. It is imperative that this education is imparted from an early age to ensure comprehension and prevent environmental degradation (Jayawardana, 2016).

In Indonesia, environmental education has been a part of the elementary school curriculum since the early 1970s. Various stakeholders have been involved in environmental education, including individual educators who implement the Adiwiyata program (Martini, 2019). This policy is clearly evidenced in the law on environmental protection and management and matters relating to the guidelines for implementing the Adiwiyata program (Nuzulia et al., 2020). The success of changes in environmental awareness is also highly dependent on its acceptance and community behavior (Martini, 2019). The field of environmental psychology has investigated the relationship between nature and humans since the 1960s, finding that PEB is determined by a combination of socio-economic, psychological, and individual determinants (Blankenberg & Alhusen, 2019). The determinants of PEB in individuals are the happiness approach, which has emerged as a new approach to the mental assessment environment. This approach is predicated on the hope of deriving pleasure from PEB, which has a positive impact, and the involvement of PEB in the future, which also has a positive impact on student wellbeing (Blankenberg & Alhusen, 2019).

Student well-being is defined as the degree of effectiveness in which students function within the school community, where they experience a sense of contentment in the school environment. A comprehensive study on student well-being reveals that it can be described as students' attitudes, emotions, health, resilience, and satisfaction with themselves, relationships with others, and experiences at school (Na'imah & Tanireja, 2017). The concept of children's well-being encompasses their physical, cognitive, social, and emotional functions, exhibiting both objective and subjective dimensions. In this context, satisfaction is defined as the realization of their potential (Karyani et al., 2015). The dimensions of student well-being include the social, cognitive,

emotional, and spiritual aspects (Na'imah & Tanireja, 2017). The theoretical framework posits that student wellbeing is conceptualized as a multifaceted relationship with the environment, encompassing four integral aspects: positivity, resilience, self-optimism, and satisfaction (Noble & McGrath, 2008). Student wellbeing is a critical component of student development, given its impact on the optimization of all aspects of student development, learning outcomes, and student development at school (Na'imah & Tanireja, 2017).

As indicated by the aforementioned description, there appears to be a correlation between the implementation of pro-environmental behaviors in educational institutions and the subsequent impact on student well-being. The success of learning is not solely attributed to students' cognitive abilities, but also to the quality of the educational environment that fosters active learning (Christie et al., 2008). In contemporary times, there are numerous elementary schools that have adopted pro-environmental behaviors, also referred to as PEB, through the Adiwiyata program. Notably, the Adiwiyata program at these schools has attained national recognition, underscoring its impact. The program incorporates various initiatives, such as the 3R's (reduce, reuse, recycle), tree-planting, and a greenhouse. Additionally, each class is assigned five students to report instances of litter, a practice colloquially referred to as "little police." The students have undergone training to become more environmentally conscious, and the curriculum has been enriched with various environmental education programs to complement the classroom instruction. The present study is supported by research from Rahayu (2020), which sought to examine the influence of environmental care attitudes and student participation in environmental education programs on pro-environmental behavior. The results of the study indicated a significant relationship between environmental care attitudes and student participation in environmental education programs on PEB. The former accounts for 44.9% of the variance, while the latter is influenced by factors external to the study. Consequently, researchers are interested in conducting research that explores factors beyond these two factors, namely the effect of pro-environmental behavior on student wellbeing. This study is entitled *The Effect of Pro-Environmental Behavior on Student Wellbeing in Adiwiyata School Students*. Therefore, the present study proposes the following research hypotheses:

H1: Pro-environmental behavior exerts an influence on the student wellbeing of adiwiyata school students.

METHODS

This study utilizes a quantitative research approach to investigate the impact of pro-environmental behavior (PEB) on student well-being in adiwiyata students in elementary schools. Through this methodology, variable measurements are made, hypotheses are tested, and conclusions are drawn regarding the influence between variables. The study employs a saturated sample, wherein the population is taken as the sample, constituting 100 students in grade 5. The study employed purposive sampling, a technique that involves the selection of participants based on specific criteria. These criteria included the implementation of environmental care programs, the cognitive abilities of the students, and their proficiency in mobile phone usage, which was determined through the distribution of questionnaires using Google Forms.

The collection of research data entailed the utilization of various instruments, including documentation, observation, and questionnaires. The study was conducted from November 2020 to May 2021, commencing with the observation of the subject and the collection of relevant documents as supporting data. The administration of survey questionnaires to elementary school students was subsequently conducted with the assistance of their respective class teachers. Prior to the collection of data, the students were provided with instructions and the rationale behind the research study, thereby obtaining their consent for participation. The study employed a questionnaire comprising two variables: pro-environmental attitudes (21 items) and student well-being (15 items). The measurement of these variables involved the utilization of a Likert scale comprising positive and negative questions, with a score range of 1 to 5 for negative questions and 5 to 1 for positive questions. The statistical analysis of the research data involved the implementation of the F test to ascertain the existence of an influence between variables and the R Square test to determine the extent of influence exerted by the variables.

RESULT AND DISCUSSION

A total of 100 questionnaires were distributed to 5th grade students, and 41.2% of the respondents were male, while 58.8% were female. The majority of the respondents were between the ages of 10 and 11. The data

analysis process involves several stages, including the assessment of normality, homogeneity, and linearity. The normality test on the questionnaire was declared normal, as it referred to the basis for decision-making. Specifically, the significance value was determined to be greater than 0.05, indicating that the residual value was normally distributed. At this stage, the researcher employed two methods: the normal P-Plot graph and the Kolmogorov-Smirnov value. The Kolmogorov-Smirnov significance value of 0.58 with an asymp. sig. value of $0.200 > 0.05$ suggests that the residual value is normally distributed. The P-Plot graph indicates a diagonal distribution of the data, supporting the hypothesis that the regression model is normally distributed. The homogeneity test results in this study are declared homogeneous, indicating that the data distribution is homogeneous if the significance value is greater than 0.05. In this study, the significance value of 0.395 is greater than 0.05, indicating a homogeneous distribution. The last stage in the analysis requirements is the linearity test, the linearity test function is used to determine the form of relationship between the independent variable and the dependent variable. Therefore, the basis for decision making in the linearity test is if the sig. deviation from linearity value > 0.05 , that there is a linear relationship between the independent variable and the dependent variable and vice versa, if the sig. deviation from linearity value < 0.05 , then there is no linear relationship between the independent variable and the dependent variable. In testing the linearity of the questionnaire data in this study, it was declared linear because the sig. deviation from linearity value $0.337 > 0.05$.

The next stage is the data analysis stage, in this stage simple regression is used to determine if there is an influence between variables and how much influence PEB has on student wellbeing. The decision is based on if $F_{count} \leq F_{table}$ then H_0 is accepted and H_a is rejected, while if $F_{count} > F_{table}$ then H_0 is rejected and H_a is accepted. Description: $H_0: \beta = 0$ (there is no effect of X on Y) $H_a: \beta \neq 0$ (there is an effect of X on Y). The results of the calculation obtained the value is $F_{hitung} > F_{table}$ ($43.627 > 3.94$), then H_0 is rejected and H_a is accepted. Therefore, the obtained regression equation has an influence of pro-environmental behavior on students' well-being. As indicated by earlier research, individuals who frequently engage with nature exhibit a reduced propensity to experience symptoms of stress, anxiety, and depression (Bressane et al., 2022). Conversely, other studies have demonstrated that nature connection can enhance positive health and cognitive outcomes, underscoring its role as a crucial factor in children's optimal development, stress management, and the promotion of interest in physical activity and social interaction (Kazdin & Vidal González, 2021).

Teachers confirm that pro-environmental behaviors implemented at school positively influence students' emotional well-being. A clean, safe, and environmentally friendly school environment fosters an atmosphere that supports students' comfort. When students have a clean and organized space, they feel safer and calmer, which helps them focus on lessons. Teachers recognize that this sense of comfort is crucial for students' emotional development, as a good environment can reduce stress and boost positive feelings. It encourages students to interact positively with their peers and teachers, and to participate in school activities. Pro-environmental behaviors implemented in schools can increase students' engagement in various positive activities. Students become more enthusiastic and proactive in maintaining the cleanliness and sustainability of the school environment (Nawawi, et al., 2024). This engagement supports physical well-being by creating a more comfortable space and emotional well-being by providing a sense of accomplishment and contribution to the environment. Schools that implement pro-environmental principles foster a favorable atmosphere for students' social, emotional, and academic development (Masykuroh & Anggrainy, 2024).

The benefits of nature connection for human health and well-being are well-documented, including stress reduction, improved mood, enhanced immunity, and increased environmental stewardship (Kövi et al., 2023). Emotional connection with nature has emerged as the strongest predictor of pro-environmental behavior (Anderson & Krettenauer, 2021). Consequently, to promote pro-environmental behavior, it is essential to adopt approaches that can fortify the bond between individuals and nature, such as educational initiatives and exposure to natural environments (Sulfa et al., 2024). In the contemporary era, concerted efforts are underway to promote awareness regarding the imperative of safeguarding and conserving the natural environment. A pivotal strategy in this endeavor entails fostering pro-environmental behaviors among children and students, a matter that has attained paramount urgency. The integration of environmental education into the national school curriculum, spanning from primary to tertiary levels, is deemed essential for ensuring that future generations develop a profound understanding of the significance of environmental stewardship and well-being, thereby

motivating them to take action (Kehinde-Awoyele et al., 2023). This underscores the notion that fostering a more pro-environmental human environment represents one of the most pressing challenges (Kollmuss & Agyeman, 2002). A strong connection between humans and nature is vital for achieving well-being, as it is directly related to pro-environmental actions and increased sustainability efforts (Barragan-Jason et al., 2022).

To ascertain the extent of the influence of variables on the outcome, the coefficient of determination test must be employed. The findings from the coefficient of determination test indicate that the R square value is 0.308, or $KD = 0.308 \times 100\% = 30.8\%$. This suggests that Pro Environmental Behavior exerts a 30.8% impact on Student Wellbeing, while 69.2% of the variance is attributable to variables not included in this study. As described in the preceding research results, the impact of Pro Environmental Behavior (PEB) on student well-being is only 30.8%, which can be categorized as weak. In contrast, the variable factors influencing PEB with others account for 69.2%. This is based on the Theory of PEB research is also supported by Theory Planned Behavior (TPB), which has other determinants determined by attitudes, subjective norms, and behavioral control. The main determinant in this theory is individual intention in carrying out certain actions or behaviors (Derckx, 2015). Another case is that of the theory proposed by Blankenberg and Alhusen (2019), which posits that PEB is influenced by four aspects: 1) socio-demographic factors (personal abilities), 2) psychological attitude factors, 3) habitual factors, and 4) contextual factors (individual, social, and institutional). The latter two of these factors constitute the main aspects that support this research. In the context of factors, individual factors emerge, including the happiness approach (student wellbeing), which has emerged as a novel approach to the environment. However, it should be noted that student well-being, also referred to as student welfare, is not solely influenced by environmental factors. Students interpret happiness as an atmosphere or condition of safety or peace, the achievement of life goals or desires, happiness, harmony or the absence of quarrels or harmonious relationships or mutual cooperation, health, and obedience to rules. A more comprehensive description of well-being encompasses a broader range of factors, namely several dimensions, namely the social, psychological, and cognitive dimensions (Karyani et al., 2015). Consequently, to enhance educational quality in Indonesia, it is imperative to not only upgrade facilities and infrastructure, but also to prioritize the enhancement of student welfare and the cultivation of positive student behavior towards their environment. This transformation is essential to shift the paradigm, ensuring that students are not merely passive recipients of education, but active participants in facilitating more effective learning experiences. This, in turn, will lead to the attainment of achievements that will redound to the benefit of the students, particularly from the elementary school level onwards.

CONCLUSION

The present study examined the impact of pro-environmental behavior (PEB) on student well-being (SWB). The hypothesis testing process, which employed the significance or meaningfulness of regression (F test), revealed a significant result ($F_{\text{count}} > F_{\text{table}} [43.627 > 3.34]$). This finding indicates that PEB exerts a substantial influence on SWB among elementary school students. Consequently, the null hypothesis (H_0) was not accepted or rejected. Consequently, the decision derived from this test is to reject H_0 and accept H_a , signifying that there is an influence between pro environmental behavior on student wellbeing. The R-squared value, which quantifies the proportion of variance in the dependent variable explained by the independent variables, is 0.308. This indicates that pro environmental behavior exerts a significant influence on student wellbeing, with a magnitude of 0.308 or 30.8% of the total variation in student wellbeing being attributable to pro environmental behavior. The remaining 69.2% of the variance is attributed to other variables not included in the study or to the term non-determination coefficient. Research on the influence of pro-environmental behavior on student wellbeing in Adiwiyata elementary schools indicates that the integration of environmental values in education can enhance student wellbeing. The implications of the study's findings underscore the necessity to fortify educational programs that prioritize sustainability, such as green initiatives, waste management, and efficient energy utilization, which can be incorporated into the school curriculum. Furthermore, the creation of a green and healthy school environment, replete with facilities that support sustainability, is poised to contribute to students' well-being. Teachers, as the primary facilitators, require training to guide students in cultivating positive pro-environmental behaviors, while parents can also play a role by supporting the implementation of such behaviors at home. This holistic approach underscores the symbiotic relationship between pro-environmental behaviors and student well-being, highlighting the potential

for a mutually beneficial relationship that extends beyond the immediate environment. Future research should explore other aspects, such as economic status and community influence.

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