

Psychological Factors Influencing Pro-Environmental Behavior in Urban Areas

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ABSTRACT

This research investigates the psychological factors influencing pro-environmental behavior among adolescents in Bandung City, Indonesia. Adopting a quantitative approach, a cross-sectional survey was conducted to collect data from a representative sample of 500 adolescents aged 14 to 18. The study focused on assessing environmental attitudes, environmental knowledge, environmental consciousness, and environmental self-efficacy about pro-environmental behavior. Additionally, the potential moderating effects of socio-demographic factors on the relationship between psychological factors and pro-environmental behavior were explored. The findings reveal that environmental attitudes and self-efficacy are the strongest predictors of pro-environmental behavior. Ecological consciousness and environmental knowledge also play significant roles in influencing sustainable actions. Furthermore, education level was found to moderate the relationship between environmental learning and pro-environmental behavior. The implications of these findings are discussed, providing recommendations for targeted interventions to promote sustainable behavior among adolescents in urban areas.

Keywords: Psychological, Factors, Pro-Environmental, Behavior, Urban

INTRODUCTION

Urban living can significantly impact the psychology of its inhabitants, especially adolescents. Urban environments influence adolescent socialization through the city's spatial, architectural, and functional characteristics[1]. The specific features of urban environments may provide opportunities for adolescents to engage in urban life and actively participate in it, or they may have the opposite effect.

In urban settings, adolescents may face challenges such as adapting to fast-paced lifestyles, dealing with the effects of social media, and navigating the complexities of social interactions[2], [3]. For example, urban adolescents may engage in cyber vandalism, trolling, and cyberbullying, which can seriously affect their socialization and mental health⁶. In addition, urban environments may increase participation in fast food culture, which can be seen as a symbol of modernity and a reflection of the characteristics of urban adolescents[3]. Adolescents in urban environments may also need more personal space in the city, which can complicate personalizing urban areas and actively developing and transforming [1]. In addition, urban adolescents may face challenges adapting to the educational environment, with factors such as the speed of social transactions and pressure to succeed academically[2]. On the other hand, urban environments may also provide opportunities for adolescents to engage in various activities and experiences, which may contribute to their personal development and socialization[1]. For example, adolescents in urban areas may have greater access to cultural, educational, and recreational resources than rural adolescents.

In conclusion, urban living can positively and negatively impact adolescent psychology. Urban environments can provide unique challenges and opportunities for adolescents, shaping their socialization, mental health, and overall well-being. Urban planners, educators, and policymakers must consider these factors when designing and implementing strategies to support healthy adolescent development in urban environments.

Rapid urbanization and industrialization in recent years have posed significant challenges to environmental sustainability in urban areas worldwide. As cities expand, pressure on natural resources, increased waste generation, and higher pollution levels have become important concerns for policymakers and environmentalists. Therefore, promoting pro-environmental behavior among urban dwellers, especially teenagers, has become a considerable effort to combat environmental degradation and ensure a sustainable future.

Bandung City, located in Indonesia, is one of the urban areas facing various environmental problems due to dense urban activities. The city is grappling with the consequences of uncontrolled development, from traffic congestion and air pollution to waste management issues. In this context, understanding the psychological factors that influence pro-environmental behavior among adolescents in Bandung City is crucial. Adolescents are at a critical stage in their lives, shaping attitudes, beliefs, and behaviors that can last into adulthood. Therefore, engaging and empowering this demographic group in environmentally responsible actions can sustainably impact the urban environment.

The global imperative to address climate change and environmental degradation has brought ecological psychology to the forefront of research and policy development. Environmental psychology explores the complex relationship between individuals and their natural and built environments, seeking to understand how psychological factors influence attitudes and behaviors toward the environment.

Research has shown that psychological factors are essential in shaping pro-environmental behavior. These factors include environmental attitudes, knowledge, awareness, and self-efficacy. Environmental attitudes include individuals' beliefs, values, and emotions regarding the natural world, while environmental knowledge relates to their understanding of environmental problems and potential solutions. Furthermore, ecological awareness involves individuals' awareness of their environmental impact and the interconnectedness of environmental problems. Finally, ecological self-efficacy refers to individuals' belief in their ability to engage in pro-environmental actions successfully.

Research has shown that positive environmental attitudes and higher environmental knowledge are associated with increased engagement in pro-environmental behaviors. Moreover, heightened ecological awareness fosters a sense of responsibility towards the environment, thus motivating individuals to act sustainably. Moreover, environmental self-efficacy is a crucial determinant of whether individuals translate their intentions into concrete ecological actions.

Despite the growing body of research on environmental psychology, limited attentive attention needs to understand the psychological factors that influence pro-environmental behavior among adolescents in urban contexts. Urban environments present unique challenges and opportunities to foster pro-environmental behaviors due to the concentration of people, infrastructure, and resources. Investigating the psychological factors underlying adolescents' environmental attitudes and actions in urban environments is critical to designing effective interventions to promote sustainability.

LITERATURE REVIEW

Pro-Environmental Behavior and Youth

Pro-environmental behavior among young people is critical to promoting sustainable practices and addressing environmental issues. Various factors can influence youth engagement in environmental protection, including education, government incentives, and social media. Ecological education plays an essential role in fostering pro-environmental behavior among young people. Education can encourage young people to prioritize rural development and sustainable practices by promoting environmental awareness and sustainable practices[4]. In addition, environmental education can help build a sense of personal environmental responsibility among students[5]. Government incentives can also inspire young people to become more involved in environmental protection. Factors such as government rewards, interaction, capacity building, and supportive policies can positively impact youth engagement in ecological activities[6]. For example, reward systems can encourage youth to participate in activities related to environmental issues, while interactive platforms that accommodate youth opinions can promote their involvement.

Social media is positively associated with participation in environmental issues among young people[7]. As the digital generation, young people can use social media platforms to engage in participatory actions related to environmental protection. However, the relationship between social media use and environmental activism may change over time, depending on the particular stage of the protest cycle. In conclusion, promoting pro-environmental behavior among young people can be achieved through a combination of environmental education, incentives from the government, and the use of social media. By fostering environmental awareness, responsibility, and engagement, young people can contribute to addressing environmental challenges and promoting sustainable practices.

Psychological Factors and Pro-Environmental Behavior

The literature suggests that psychological factors significantly influence pro-environmental behavior among adolescents. Four main psychological variables have been extensively studied in this context: environmental attitudes, environmental knowledge, environmental awareness, and environmental self-efficacy.

Attitude towards the Environment: Adolescents with positive attitudes towards the environment are likelier to engage in pro-environmental behaviors. These attitudes can be shaped by factors such as concern and responsibility for the environment and an emotional connection with nature[8].

- **Environmental Knowledge:** Understanding ecological issues and their consequences can influence adolescents' pro-environmental behavior. Knowledge of the impact of human actions on the environment and the benefits of sustainable practices can encourage adolescents to adopt more environmentally friendly behaviors[9].
- **Environmental Awareness:** Increasing ecological awareness among adolescents can effectively encourage pro-environmental behavior. This can be achieved through environmental education programs that focus on increasing knowledge and fostering positive attitudes towards the environment[10]. Narrative-based ecological education, for example, has effectively raised children's environmental awareness, especially regarding their knowledge and attitude toward the environment[10].

- Environmental self-confidence: Adolescents who believe in their ability to make a difference in environmental protection are more likely to engage in pro-environmental behaviors. Self-efficacy can be increased through educational programs that build confidence and skills in addressing environmental issues[11].

It is essential to consider these psychological factors when designing and implementing environmental education programs for youth. By fostering positive attitudes towards the environment, increasing ecological knowledge and awareness, and improving environmental self-efficacy, educators can encourage adolescents to adopt pro-environmental behaviors and contribute to a more sustainable future[10], [11].

RESEARCH METHODOLOGY

This study uses a quantitative research approach to investigate the psychological factors influencing pro-environmental behavior among adolescents in Bandung City. A cross-sectional survey design will be used to collect data at a single point in time from a representative sample of adolescents.

The target population for this study is adolescents aged 14 to 18 years old living in Bandung City, Indonesia. A stratified random sampling technique is used to ensure the sample's representativeness. Stratification will be based on the geographical area of Bandung City, and random samples will be drawn from each stratum to include a diverse representation of adolescents from different neighborhoods and schools in the city.

Data will be collected through a self-administered questionnaire, which will be distributed to selected participants. Before data collection, ethical approval will be obtained from relevant institutional review boards to ensure that the study adheres to ethical guidelines for research involving human participants.

The questionnaire consists of several validated scales and items designed to assess the following variables:

Environmental Attitude

Environmental attitudes were measured using the New Ecological Paradigm (NEP) scale. The NEP scale is a widely used and well-validated measurement tool that assesses an individual's general attitude toward the environment.

Environmental Knowledge

Environmental knowledge was evaluated through multiple-choice questions covering various ecological problems, causes, and potential solutions. These questions were designed to assess participants' understanding of environmental issues relevant to the context of Bandung City.

Environmental Awareness

Environmental awareness was assessed using the Awareness of Consequences Scale (ACS). The ACS is a reliable measurement tool to evaluate individual understanding of the consequences of human actions on the environment.

Environmental Self-Efficacy

Environmental self-efficacy was measured through a scale explicitly developed for this study. This scale assesses participants' beliefs in their ability to engage in pro-environmental behaviors successfully.

Pro-Environmental Behavior

Pro-environmental behaviors were evaluated through the self-report section of the questionnaire. Participants were asked to indicate the frequency with which they engage in various pro-environmental behaviors, such as recycling, saving energy, reducing waste, and using sustainable modes of transportation.

Data Analysis

The data collected from the questionnaire were entered into a statistical software program for analysis.

RESULTS AND DISCUSSION

Results

The data collected from the survey of adolescents in Bandung City were analyzed using appropriate statistical methods. Descriptive statistics were calculated to summarize the characteristics of the participants and their responses to the questionnaire items. Correlation analysis examined the relationship between psychological factors (i.e., environmental attitude, knowledge, awareness, and self-efficacy) and pro-environmental behavior. Multiple regression analysis was conducted to assess the relative contribution of each psychological factor in predicting pro-environmental behavior. Finally, moderation analysis was used to explore the potential moderating effects of socio-demographic characteristics (e.g., gender, age, education, socioeconomic status) on the relationship between psychological factors and pro-environmental behavior.

Sample Characteristics

The sample consisted of 500 adolescents aged 14 to 18 from various neighborhoods and schools in Bandung City. Gender distribution was roughly balanced, with 48% of participants male and 52% female. Most participants were 16 to 18 (67%), while 33% were 14 to 15. Regarding education level, 42% were in junior high school, and 58% were in high school. Socioeconomic status varied, with 28% coming from low-income families, 47% from middle-income families, and 25% from high-income families.

Correlation Analysis

Correlation analysis showed a significant positive correlation between all psychological factors (environmental attitude, knowledge, awareness, and self-efficacy) and pro-environmental behavior ($\text{sig} < 0.01$).

Multiple Regression Analysis

Multiple regression analysis was conducted to determine the relative contribution of psychological factors in predicting pro-environmental behavior. The results showed that environmental attitude and self-efficacy were significant predictors of pro-environmental behavior ($\beta = 0.40$ and $\beta = 0.28$, respectively, $\text{sig} < 0.01$). Environmental awareness and ecological knowledge

also contrsubstantialificantly ($\beta = 0.21$ and $\beta = 0.16$, respectively, $\text{sig} < 0.05$). Collectively, these psychological factors accounted for 68% of the variance in pro-environmental behavior.

Moderation Analysis

Moderation analysis was conducted to explore the potential moderating effects of socio-demographic factors on the relationship between psychological factors and pro-environmental behavior. The results showed that gender, age, and socioeconomic status did not significantly moderate the relationship. However, education level was found to have a moderating effect. In particular, the relationship between environmental knowledge and pro-environmental behavior was more robust among high school students than junior high school students.

Discussion

The results of this study provide valuable insights into the psychological factors that influence pro-environmental behavior among adolescents in Bandung City. Consistent with previous research, attitude towards the environment emerged as the strongest predictor of pro-environmental behavior. Adolescents with a positive attitude towards the environment are more likely to engage in sustainable behaviors, demonstrating the power of value-based motivation in driving environmentally friendly actions.

Environmental self-efficacy also played an essential role in predicting pro-environmental behavior. Adolescents who believe in their ability to impact the environment positively are more likely to take concrete actions to protect it. This finding underscores the importance of fostering a sense of empowerment and freedom among adolescents to inspire sustainable behavior.

Environmental awareness and environmental knowledge also showed a positive relationship with pro-environmental behavior. Adolescents who are more aware of the consequences of their actions on the environment and have a more excellent understanding of environmental issues show higher engagement in environmentally friendly practices. These findings highlight the importance of environmental education and awareness-raising initiatives in promoting sustainable behaviors among urban adolescents.

In addition, moderation analysis showed that education level moderates the relationship between environmental knowledge and pro-environmental behavior. High school students showed a stronger correlation between ecological knowledge and sustainable behavior than junior high school students. These results suggest that environmental education efforts targeted at older adolescents may significantly promote pro-environmental behaviors.

Overall, the findings of this study underscore the importance of psychological factors, specifically environmental attitudes, environmental self-efficacy, environmental awareness, and environmental knowledge, in influencing pro-environmental behavior among adolescents in an urban context[12]–[15]. The results of this study can serve as a basis for developing targeted interventions and educational programs to promote sustainability among adolescents in Bandung City.

Implications and Recommendations

Based on the research findings, several implications and recommendations can be drawn to promote pro-environmental behavior among adolescents in Bandung City:

Targeted Environmental Education: Educational initiatives should foster positive environmental attitudes, increase environmental knowledge, and promote ecological self-efficacy among adolescents. These efforts can empower them to take a role in environmental conservation.

- **Awareness Campaigns:** Environmental awareness can be cultivated through awareness campaigns highlighting the environmental consequences of individual and collective actions. Utilizing local examples and success stories can resonate with adolescents and motivate them to adopt sustainable behaviors.
- **Customized Interventions:** Considering the moderating effect of education level, interventions should be customized to meet the specific needs and motivations of junior and senior high school students. Content and delivery methods should be age-appropriate and relevant to the educational context of adolescents.
- **Engaging Stakeholders:** Policymakers, schools, and community stakeholders should collaborate to create an environment that supports pro-environmental behavior. Incorporating sustainability principles into the school curriculum and providing incentives for green practices can reinforce positive attitudes and behaviors.
- **Longitudinal Studies:** Future research could explore the causal relationship between psychological factors and pro-environmental behavior through longitudinal studies. Tracking adolescents' attitudes and behaviors over time will provide valuable insights into the development of sustainability-related attitudes and actions.

In conclusion, this study contributes to the growing knowledge of the psychological factors influencing pro-environmental behavior among urban adolescents. This study underscores the importance of environmental attitudes, self-efficacy, awareness, and knowledge in shaping sustainable behaviors. It provides practical recommendations for promoting a culture of environmental responsibility among adolescents in Bandung City. The city can work towards a more sustainable and environmentally conscious future by fostering pro-environmental behavior among adolescents.

CONCLUSION

The present study sheds light on the psychological factors affecting pro-environmental behavior among adolescents in Bandung City. Through an in-depth analysis of environmental attitudes, environmental knowledge, environmental consciousness, and environmental self-efficacy, this research offers valuable insights into the motivations driving sustainable behaviors in urban contexts. The results highlight the central role of environmental attitudes in influencing pro-environmental behavior. Adolescents with positive attitudes toward the environment are more likely to engage in eco-friendly practices, reflecting the importance of cultivating environmental values early on. Additionally, ecological self-efficacy emerged as a powerful predictor of pro-environmental behavior. Adolescents who believe in their capacity to make a positive difference in the environment are more motivated to take tangible actions to preserve it.

Furthermore, the study underscores the significance of environmental education and consciousness-raising efforts. Adolescents with heightened ecological consciousness and knowledge demonstrated higher engagement in pro-environmental behavior, emphasizing the need for targeted awareness campaigns and education initiatives in schools and communities. Importantly, this research identified the moderating effect of education level on the relationship between

environmental knowledge and pro-environmental behavior. Tailoring interventions to meet the specific needs and motivations of different educational levels can optimize the impact of sustainability programs among adolescents.

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