How Green Sentiment Promotes Pro-Environmental Behavior: The Roles of Green Commitment and Empathic Ability

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Abstract. This research explores the ways in which people's feelings about the environment (green sentiment) impact how they behave toward it (pro-environmental behavior) and looks into two additional factors that might influence these relationships: green commitment and empathic ability (both as mediating and moderating influences). The theoretical framework of Affective Events Theory suggests that our emotions affect our behaviors through both direct and indirect pathways of development through attitudes towards a situation. A cross-sectional survey was conducted with 220 respondents from Chongqing, China, and analyses were completed using SPSS and Mplus to test the moderated mediation model. The results support a positive relationship between green sentiment and pro-environmental behavior; that is, when someone feels good about the environment, they are more likely to act in ways that demonstrate their concern about it. In addition, green commitment also impacts pro-environmental behavior and serves as a mediator between green sentiment and pro-environmental behaviors. Finally, empathic ability moderates the relationship between green sentiment and green commitment and strengthens the effect at an increasing degree of empathic ability. The indirect effect of green sentiment on pro-environmental behavior through green commitment was stronger when empathic ability was high. The results provide insight into how emotional aspects affect pro-environmental behaviours and help define the emotional pathway and boundary of empathic ability within the literature.

Keywords: green sentiment, green commitment, pro-environmental behavior, empathic ability, moderated mediation, affective events theory

1 Introduction

Climate change, biodiversity loss, and environmental degradation have emerged as significant challenges to global sustainability. Tackling these issues calls for not only policy and technical solutions but also considerable changes in human behaviour[6]. An

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important concept in environmental behavioural science is pro-environmental behaviour, or those acts which lessen the pressure on the planet, or that might be viewed as sustainable[3][9]. A considerable body of work has investigated the determinants of pro-environmental behaviour and highlighted both the role of environmental knowledge, and attitudes, and the role of social norms[3]. More recent work also shows how pro-environmental behaviour is underpinned by psychological, social, and contextual factors[6]. However, in this literature, rational and cognitive explanations take precedence, and the emotional basis of pro-environmental behavior has received less attention. Of these, green sentiment may constitute an important but under-researched driver behind pro-environmental behaviour[2][4]. Green sentiment is the extent to which individuals feel concern for, or attachment to, environmental protection. Research in environmental psychology indicates that feelings we have for nature can promote stronger pro-environmental attitudes and encourage sustainable behaviours[5][8]. How, exactly, this connection between feelings of concern and attachment to the environment and pro-environmental behaviour is mediated, is not understood.

One potential explanation is green commitment, a persistent psychological bond with environmental aspects and a stable willingness to support environmental action [1]. Furthermore, empathic ability might facilitate this process, as high-empathy people are more likely to have emotional responses to environmental destruction and, therefore, pro-environmental orientations. Drawing on the idea of the emotional drivers of pro-environmental behavior and using Affective Events Theory [7], this research looks at how green sentiment influences green commitment, and in turn, how green sentiment and empathic ability predict pro-environmental behavior, along with moderating on the effect of green sentiment on green commitment. In this way, the current study adds to the literature by identifying the affective root of pro-environmental behaviour and mapping the psychological pathway through which environmental emotions are converted into environmental action.Investigating this issue is critical to understanding the underlying emotional mechanism behind pro-environmental behaviour, as well as understanding why some individuals will continue to engage in pro-environmental behaviours even when there is no external reward present. Green sentiment could be the first emotional response that drives people, while green commitment could serve to stabilize and/or prolong this initial emotional response. Thus, the current study provides evidence of support for both the need for greater investigation of affective and psychological constructs and their influences on environmental behaviours.

2 Methodology and Data Source

2.1 Methodology

The study adopts a moderated mediation model grounded in Affective Events Theory. Green sentiment represents the affective reaction, green commitment the attitudinal state, and pro-environmental behavior the behavioral outcome. The questionnaire items were adopted from the published mature scales of scholars.All items used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Data analysis involved SPSS for descriptive statistics, reliability, and correlations, and Mplus for confirmatory factor

analysis and structural equation modeling.The analytical methodology used in the current research was appropriate for the study because the model accounted for mediation effects and moderation effects together. The initial phase of analysis was done using SPSS in order to gain an understanding of the data. After completing the initial analysis, testing the hypothesized structural relationships between variables was done in Mplus, and the indirect effect of green sentiment on pro-environmental behaviors via green commitment was tested for differences across levels of empathic ability. Using these two different methods allowed for the investigation of both direct relationships among variables, as well as exploring the underlying psychological processes by which green sentiment affects pro-environmental behaviors.

2.2 Data Source

A cross-sectional survey was conducted in Chongqing, China, using an online questionnaire via Sojump. Random sampling recruited respondents from various organizations. Participation was voluntary, anonymous, and confidential, with informed consent obtained. In total, 220 valid questionnaires were collected. The sample included 41.4% males and 58.6% females, with diverse age, education, occupation, and income levels, providing a relatively broad representation.While only one city was sampled for study, Chongqing provided a large enough population (urban) basis to support both the rapid growth of urbanization and improved environmental awareness and sustainability, particularly for an urban area that is experiencing rapid industrialization. In urban areas like this, there is generally an increase in both the economic benefits of urbanization and the environmental challenges that are associated with that urbanization. By using an online survey, we were able to obtain samples of participants with various demographics, which supported the practical relevance of our sample and ensured we captured a broad range of individuals' perceptions regarding green sentiment, green commitment, empathic ability, and environmentally-friendly behavior.

3 Empirical Research

3.1 Structural Equation Modeling

Descriptive statistics showed moderate to high levels of green sentiment (M = 3.49, SD = 1.03), green commitment (M = 3.71, SD = 0.94), and pro-environmental behavior (M = 3.71, SD = 0.89), with empathic ability lower (M = 2.62, SD = 1.07). Reliability was satisfactory, with Cronbach's alpha values ranging from 0.875 to 0.951 (overall 0.890). The KMO measure was 0.906, and Bartlett's test was significant, confirming suitability for factor analysis.Confirmatory factor analysis supported the four-factor model with good fit ($\chi^2/df = 1.734$, RMSEA = 0.058, SRMR = 0.038, CFI = 0.958). Convergent validity was adequate, with factor loadings mostly above 0.70, AVE > 0.50, and CR > 0.70.These results indicate that the measurement model had acceptable reliability and validity. This means that the questionnaire items measured their intended constructs in

a stable and consistent way. This is important because green sentiment, green commitment, empathic ability, and pro-environmental behavior are psychological and behavioral constructs that cannot be directly observed.

3.2 Fitting and Analysis

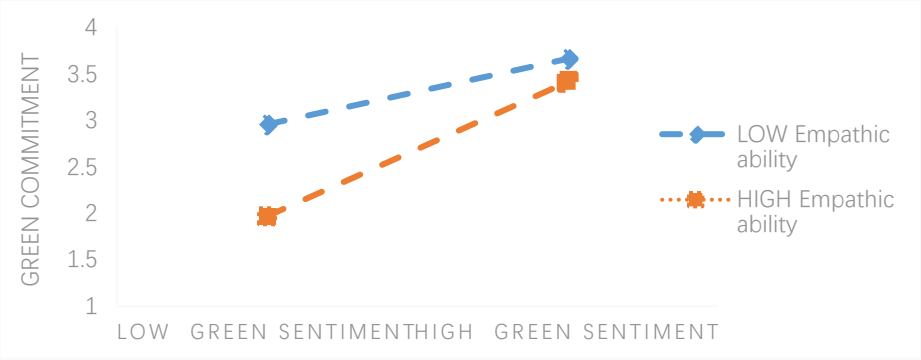

Fig. 1. Moderating effect of empathic ability on the relationship between green sentiment and green commitment.

The structural model demonstrated good fit ($\chi^2/df = 1.626$, RMSEA = 0.053, SRMR = 0.056, CFI = 0.951). The structural path estimates are presented in Table 1. The results show that green commitment had a significant positive effect on pro-environmental behavior (B = .510, SE = .089, C.R. = 5.745, $p < .001$, $\beta = .497$). Green sentiment also had a significant positive effect on pro-environmental behavior (B = .225, SE = .072, C.R. = 3.139, $p = .002$, $\beta = .266$). In addition, green sentiment had a significant positive effect on green commitment (B = .538, SE = .059, C.R. = 9.183, $p < .001$, $\beta = .652$). Empathic ability had a significant negative direct effect on green commitment (B = −.309, SE = .052, C.R. = −5.925, $p < .001$, $\beta = -.408$). More importantly, the interaction term between green sentiment and empathic ability had a significant positive effect on green commitment (B = .185, SE = .039, C.R. = 4.773, $p < .001$, $\beta = .259$).Although empathic ability showed a negative direct effect on green commitment, the positive interaction effect suggests that empathy mainly functions as a boundary condition. In other words, empathic ability does not automatically increase green commitment, but it strengthens the effect of green sentiment on green commitment. As shown in Figure 1, the positive relationship between green sentiment and green commitment was stronger when empathic ability was high. As shown in Figure 1, the positive relationship between green sentiment and green commitment was stronger when empathic ability was high. Moderated mediation analysis further confirmed that the indirect effect of green sentiment on pro-environmental behavior through green commitment was stronger at higher levels of empathic ability.This finding indicates that the level of empathy one possesses may enhance the process through which emotions are converted into behavior associated with the environment. People with a greater ability to empa-

thize may be better able to understand how their actions create suffering for other people (e.g., those who do not have clean air or water due to pollution, climate change, etc.), allowing for a more seamless transition from their positive feelings about protecting the environment into long-term commitment to acting in an environmentally friendly manner. On the other hand, while lower empathic levels might lead people to have some level of positive sentiment towards the environment, these sentiments probably will not convert into a long-term commitment. Thus, the moderation analysis provides a more in-depth description of the conditions under which and the types of individuals who are most likely to experience conversion of positive sentiment about protecting the environment into pro-environmental behavior.

Table 1. Summary of Structural Path Estimates

Dependent variable	Predictor	B	SE	C.R.	p	β
Pro-environmental behavior	Green commitment	.510	.089	5.745	< .001	.497
Pro-environmental behavior	Green sentiment	.225	.072	3.139	.002	.266
Green commitment	Green sentiment	.538	.059	9.183	< .001	.652
Green commitment	Empathic ability	−.309	.052	−5.925	< .001	−.408
Green commitment	Green sentiment × empathic ability	.185	.039	4.773	< .001	.259

4 Conclusion

This Research shows that positive feelings about the environment can encourage people to engage in environmentally friendly behaviour, both directly and indirectly through green commitment. When people have stronger concern, attachment, or positive feelings toward the environment, they are more likely to develop a stable commitment to environmental protection. This commitment then encourages them to take pro-environmental actions. This finding suggests that environmentally friendly behaviour is not only shaped by knowledge or external pressure, but also by people's emotional connection with environmental issues. Empathic ability also plays an important role in this process. People with stronger empathic ability may be more sensitive to environmental damage and more willing to turn their green feelings into a lasting sense of responsibility. However, empathic ability should mainly be understood as a boundary condition. It does not directly increase green commitment by itself. Instead, it strengthens the relationship between green sentiment and green commitment.

This research supports Affective Events Theory by showing that emotions can influence environmental behaviour through a psychological process. The findings suggest that green sentiment can first shape green commitment, and this commitment can then

promote pro-environmental behaviour. In this way, the study helps explain how environmental feelings are changed into environmental actions. It also shows that empathy matters in this process. For people with higher empathic ability, green sentiment has a stronger effect on green commitment. This means that emotional concern for the environment may be more powerful when people are also able to understand and feel the suffering caused by environmental damage.In practice, the findings suggest that environmental campaigns should not only give people information. They should also help people build emotional concern for the environment. For example, schools, communities, and public organizations can use real stories, pictures, videos, and local cases of environmental damage to make people feel more connected to environmental problems. Activities such as community clean-up programs, green volunteering, and visits to polluted or restored areas may also help people develop stronger empathy and commitment. Repeated participation is important because it can help people move from short-term awareness to long-term environmental responsibility. Therefore, effective environmental education should combine knowledge, emotional experience, and continuous participation.

This study also has several limitations. First, the study used a cross-sectional design, so it cannot fully prove causal relationships among the variables. Second, the data were collected from one city in China, which may limit the generalizability of the findings. Third, the study relied on self-reported questionnaire data, so common method bias may still exist, although anonymous participation and statistical testing were used to reduce this problem. Future studies could use longitudinal or experimental designs to test the model more strongly. They could also examine other mediating or moderating variables, compare different regions or age groups, and further explore empathy toward nature in different contexts.

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