

*Examine the Impact of Proactive Personality and Environmental Awareness on
College Students' Pro-environmental Behaviors*

Rui-Ting Huang, National Chung Hsing University, Taiwan

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Abstract

Although there are many pro-environmental and green studies, relatively little effort has been made to investigate the connections between proactive personality, environmental awareness, and pro-environmental behaviors. 316 college students in Taiwan participated in this study, and the partial least squares structural equation modeling (PLS-SEM) analysis was performed to evaluate the connections between proactive personality, environmental awareness, and pro-environmental behaviors. The study findings have revealed that environmental awareness would be positively linked to conservation style, land stewardship, and social environmentalism, but not associated with environmental citizenship. Additionally, it has been found that proactive personality would be positively connected with environmental awareness, conservation style, land stewardship, environmental citizenship, and social environmentalism. The theoretical and practical suggestions are provided to enhance pro-environmental behaviors.

Keywords: Proactive Personality, Environmental Awareness, Green Behavior,
Pro-environmental Behaviors

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1. Introduction

Proactive personality has been one of the focal points in previous studies, due probably to the central impact of proactive personality on career adaptation (Tolentino, Garcia, Lu, Restubog, Bordia, & Plewa, 2014), intrinsic motivation (Horng, Tsai, Yang, Liu, & Hu, 2016), work performance (Fuller & Marler, 2009; Hung, Chen, & Lin, 2015), and entrepreneurial activities (Crant, 1996; Uy, Chan, Sam, Ho, & Chernyshenko, 2015). For example, Hung et al. (2015) has indicated that proactive personality could be closely associated with career success and work performance. Uy et al. (2015) has shown that proactive personality is one of the key elements that could drive more positive entrepreneurial intention. Although several researchers have highly stressed the pivotal role of proactive personality in individual outcomes, relatively little effort has been made to investigate the impact of proactive personality on pro-environmental behaviors. Specifically, whether proactive personality could be one of key predictors of pro-environmental behaviors has not yet been fully examined in previous reports. Therefore, the nexus between proactive personality and pro-environmental behaviors should be worthy of further discussions in this study.

Moreover, recently, there is a growing interest in the issues of environmental awareness, probably because environmental awareness could be one of the key elements that potentially affect energy consumption, environmental attitude, and pro-environmental behaviors (Blok, Wesselink, Studynka, & Kemp, 2015; Kikuchi-Uehara, Nakatani, Hirao, 2016; Moghimehfar & Halpenny, 2016; Pothitou, Hanna, and Chalvatzis, in press). For instance, Moghimehfar and Halpenny (2016) suggested that “awareness of environmental issues can be a potential predictor of behavioral intention” (p.366). Blok et al. (2015) indicated that environmental awareness, which could be viewed as “environmental knowledge and the recognition of environmental problems” (p.57), would lead to more positive pro-environmental behavior. Nevertheless, Pothitou et al. (in press) added that “while increased environmental awareness and concern may result from advanced environmental knowledge, this may not be sufficient to induce pro-environmental behavior” (p.2). In order to clarify the impact of environmental awareness on pro-environmental behaviors, the connections between proactive personality, environmental awareness, and pro-environmental behaviors should merit further investigations in this study. Hence, the primary goal of this study is not only to examine the influences of proactive personality and environmental awareness on pro-environmental behaviors, but also to explore the relationship between proactive personality and environmental awareness.

2. Barriers to Pro-Environmental Behaviors

Previous research has shown that there are many barriers to environmental friendly behaviors (Liobikienė & Juknys, 2016). One of the central barriers is closely linked to personal habits, not only because changing personal habits are very difficult, but also because it is hard to cultivate good habits. Liobikienė and Juknys (2016) suggested that “much of the prior environmental research on the theory of reasoned action and planned behaviour shows that there is a gap between environmental beliefs and actions caused by the great difficulty of changing habits”(p.3415). For example, Nasrudin, Rostam, and Noor (2014) have indicated that personal traveling habits could play a key role in enhancing sustainable traveling behaviors. Second, another barriers to environmental friendly behavior may be connected with personal finance and expected benefits of buying sustainable products. More precisely, Liobikienė and Juknys (2016) indicated that the costs of purchasing sustainable products could be another potential hindrance for environmental friendly behaviors.

In addition, Moser (2016) revealed that the potential benefits and costs of purchasing green products could be key determinants of environmental friendly behaviors. Third, it has been found that marketing and branding strategies for sustainable products are critical factors that could affect environmental friendly behaviors. Liobikienė and Juknys (2016) have revealed that poor image in sustainable products is another unfavorable factor that could impede environmental friendly behaviors. Finally, several reports have further indicated that environmental knowledge and awareness could be pivotal driving forces of environmental friendly behaviors (Liobikienė & Juknys, 2016). Accordingly, factors that could reduce barriers to pro-environmental behaviors should be focal points in this report. To close this research gap, and further clarify the connections between proactive personality and pro-environmental behaviors, consequently, this study proposes the following hypotheses and research framework (see figure 1).

- H1: Environmental awareness will be positively associated with conservation lifestyle.
- H2: Environmental awareness will be positively associated with land stewardship.
- H3: Environmental awareness will be positively associated with environmental citizenship.
- H4: Environmental awareness will be positively associated with social environmentalism.
- H5: Proactive personality will be positively associated with environmental awareness.
- H6: Proactive personality will be positively associated with conservation life-style.
- H7: Personality will be positively associated with land stewardship.
- H8: Personality will be positively associated with environmental citizenship.
- H9: Personality will be positively associated with social environmentalism.

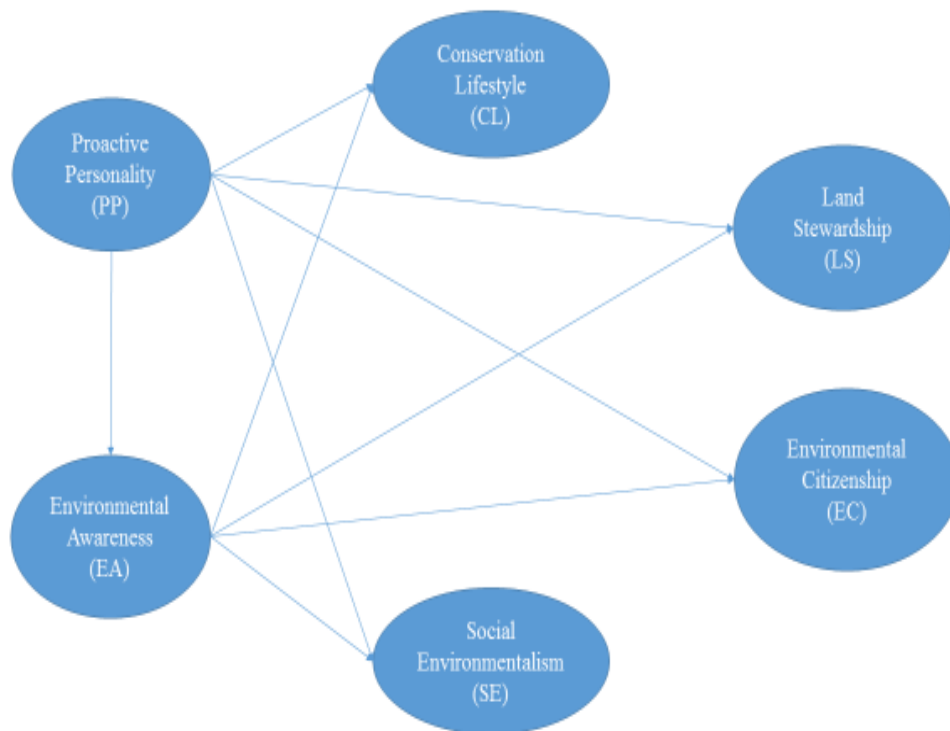


Figure 1: Research framework of the study

3. Research Methodology

Sampling profile

As shown in table 1, 316 undergraduate students participated in this study. The study findings indicated that there were 102 males, 212 females, and 2 unknown gender participants. Most of the participants were from college of public health and nutrition (n=134; 42%). Moreover, except 3 missing data, it was shown that freshmen, sophomores, juniors, and seniors were 88, 71, 140, and 14, respectively. Finally, it was demonstrated that the mean age of participants was 20.22, and standard deviation of the participants was 2.943.

Demographics	Items	Number	Percentage of respondents
Gender	Male	102	32
	Female	212	67
	Unknown	2	1
Academic Level	Freshman	88	28
	Sophomore	71	23
	Junior	140	44
	Senior	14	4
	Missing data	3	1
College	Liberal Arts	49	15
	Management Sciences	96	30
	Sciences	8	3
	Engineering	21	7
	Public Health and Nutrition	134	42
Age	Missing data	8	3
	Valid participants	311	
	Missing data	5	
	Mean Age	20.22	
	Standard deviation	2.943	

Table 1. Sampling profile

Data collection

Because the target population of this study were undergraduate students in Taiwan, the data was collected from various colleges and universities. Specifically, 800 surveys were delivered to undergraduate students from northern, central and southern Taiwan. After screening out the questionable data, the researchers finally obtained 316 usable surveys.

4. Data Analysis and Results

Measurement model assessment

In order to probe into the connections between predictor variables and pro-environmental behaviors, the SPSS and smart PLS software were utilized to examine the data. Specifically, the researchers carried out the partial least squares (PLS) analysis, a structural equation modelling technique (Lee, Petter, Fayard, & Robinson, 2011), to determine whether there is

any relationship between proactive personality, environmental awareness and pro-environmental behaviors. First, with regard to the assessment of measurement model, two critical values, the composite reliability (CR) and factor loading, were used to evaluate the reliability and internal consistency of the survey instrument. In table 2, it was found that the composite reliability (CR) of different variables and all factor loadings were greater than .70, which revealed that the reliability and internal consistency of the survey instrument were in line with the suggested criteria proposed by Fornell and Larcker (1981). Additionally, two pivotal values, the average variance extracted (AVE) and square root of AVE, were adopted to test the convergent and discriminant validity. As shown in table 2 and 3, it was demonstrated that the convergent and discriminant validity met suggested standards proposed by Fornell and Larcker (1981), not only because the AVE values were larger than the suggested criteria of .50, but also because the square root of AVE on the diagonal was larger than off-diagonal correlations. Consequently, it was revealed that the measurement model was satisfactory.

Item	CL	EA	EC	LS	SE	PP
CL1. Recycled paper, plastic and metal	.77					
CL2. Conserved water or energy in my home	.85					
CL3. Bought environmentally friendly and/or energy efficient products	.79					
EA1. Environmental pollution affects my health		.82				
EA2. I worry about environmental problems		.85				
EA3. Environmental problems are a risk for the future of my children		.83				
EA4. A better environment starts with me.		.79				
EC1. Voted to support a policy/regulation that affects the local environment			.83			
EC2. Signed a petition about an environmental issue			.90			
EC3. Donated money to support local environmental protection			.89			
EC4. Wrote a letter (an article) in response to an environmental issue			.83			
LS1. Made my yard or my land more desirable for wildlife				.87		
LS2. Participated (provided data) in a wildlife study				.86		
LS3. Volunteered to improve wildlife habitat in my community				.90		
SE1. Talked to others in my community about environmental issues					.92	
SE2. Worked with others to address an environmental problem or issue					.92	
SE3. Participated as an active member in a local environmental group					.86	
PP1. No matter what the odds, if I believe in something I will make it happen						.82
PP2. Nothing is more exciting than seeing my ideas turn into reality.						.79
PP3. I excel at identifying opportunities.						.82
PP4. I am always looking for better ways to do things						.83
PP5. If I believe in an idea, no obstacle will prevent me from making it happen						.85
CR	.84	.89	.93	.91	.93	.91
AVE	.65	.68	.76	.77	.81	.67
Cronbach's alpha	.73	.84	.89	.85	.88	.88

Note: CL, conservation lifestyle; EA, environmental awareness; EC, environmental citizenship; LS, land stewardship; SE, social environmentalism; PP, proactive personality; Diagonal elements are the square root of Average Variance Extracted (AVE);

Table 2. Confirmatory factor analysis

Construct	CL	EA	EC	LS	PP	SE
CL	.81					
EA	.32	.82				
EC	.38	.10	.87			
LS	.58	.23	.66	.88		
PP	.38	.28	.29	.40	.82	
SE	.52	.22	.73	.75	.40	.90

Note: CL, conservation lifestyle; EA, environmental awareness; EC, environmental citizenship; LS, land stewardship; SE, social environmentalism; PP, proactive personality; Diagonal elements are the square root of Average Variance Extracted (AVE);

Table 3. The correlations of each construct

Structural model assessment

Several indicators, including t-values, path coefficients, and R-square values, were utilized to test the structural model, hypotheses, and research questions in this study. In figure 2, it was shown that (H1, $\beta = .237$; $t = 4.488$), (H2, $\beta = .126$; $t = 2.469$), and (H4, $\beta = .115$; $t = 2.230$) were supported by study findings, whereas H3 ($\beta = .022$; $t = 0.415$) was not buttressed by the study results. In other words, the study findings indicated that environmental awareness was positively linked to conservation style, land stewardship, and social environmentalism, but not associated with environmental citizenship. In addition, it was found that proactive personality was positively connected with environmental awareness (H5, $\beta = .286$; $t = 4.566$), conservation style (H6, $\beta = .317$; $t = 5.983$), land stewardship (H7, $\beta = .361$; $t = 7.336$), environmental citizenship (H8, $\beta = .284$; $t = 5.235$), and social environmentalism (H9, $\beta = .375$; $t = 7.033$). Finally, the study findings demonstrated that proactive personality, which accounted not only for a total of 8.2 % of variance in environmental awareness, but also for a total of 8.5% of variance in environmental citizenship, were positively related to environmental awareness and citizenship. More importantly, proactive personality and environmental awareness, which explained a total of 20.0 % of variance in conservation style, a total of 17.3 % of variance in land stewardship, and a total of 17.8 % of variance in social environmentalism, were positively associated with conservation style, land stewardship, and social environmentalism.

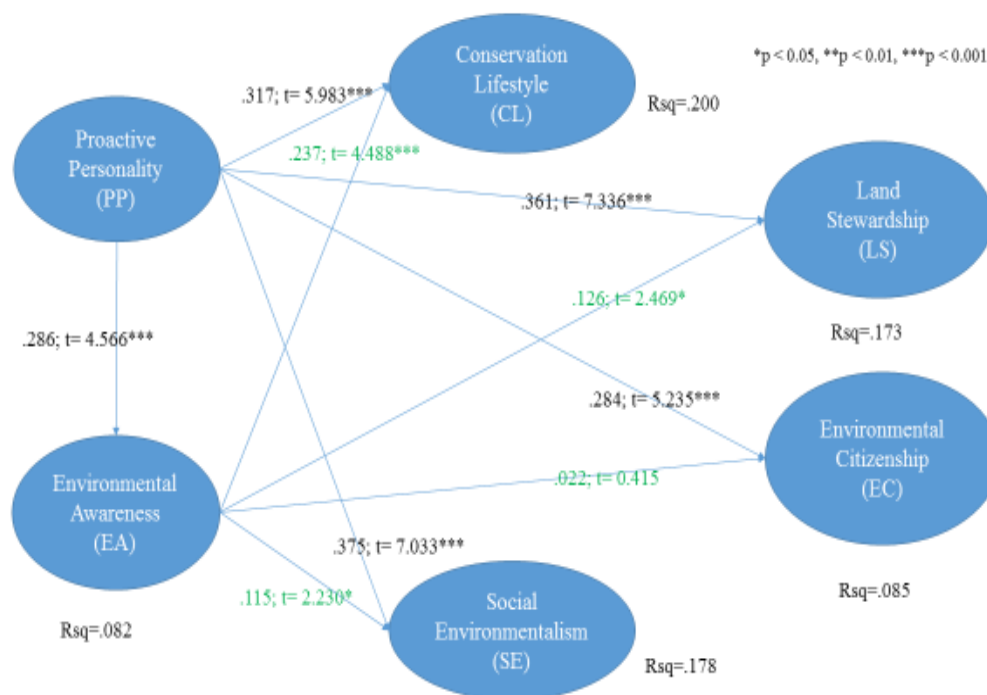


Figure 2: The path coefficient

5. Discussions and Implications

The primary purpose of this study is not only to examine the influences of proactive personality and environmental awareness on pro-environmental behaviors, but also to explore the relationship between proactive personality and environmental awareness. First, in terms of the connections between environmental awareness, and pro-environmental behaviors, the study findings, partly consistent with previous reports (Blok et al., 2015), have shown that environmental awareness could play a key role in determining more positive conservation style, land stewardship, and social environmentalism behaviors. Nevertheless, it has been found that environmental awareness could have no relationship with environmental citizenship behaviors. More precisely, the increase in environmental awareness does not result in the increase in environmental citizenship behaviors.

One possible explanation for this inconsistent result could be related to the participants of this study. That is, because the participants of this study are undergraduate students in Taiwan, it is likely that they could be too young to understand the importance of environmental issues and have financial resources to support local environmental protection. Although this study result is contradictory to previous research (Blok et al., 2015), it is in line with study suggestions proposed by Pothitou et al. (in press). Hence, in order to enhance pro-environmental behaviors, it is suggested that more efforts should be made to increase environmental awareness. For example, it is suggested that social media such as Facebook, Twitter, and online forums should be adopted to promote environmental awareness.

Last but not least, with respect to the role of proactive personality in environmental awareness, and pro-environmental behaviors, the study findings are in line with previous suggestions (Crant, 1996; Fuller & Marler, 2009; Hung et al., 2015; Uy et al., 2015), which indicate that proactive personality could be positively related to environmental awareness,

conservation style, land stewardship, environmental citizenship, and social environmentalism behaviors. In other words, people with higher levels of proactive personality are more likely to have better environmental awareness, and pro-environmental behaviors. Accordingly, it is implied that more attention should be paid to facilitating proactive people to participate in environmental protection activities, due mainly to the close link between proactive personality, environmental awareness, and pro-environmental behaviors. For instance, it is suggested that practitioners in the field of environmental protection should encourage proactive people to promote environmental awareness, and further join environmental protection activities.

6. Conclusions

The study findings have made significant contributions to the field of environmental psychology by verifying the connections between proactive personality, environmental awareness, and pro-environmental behaviors. As people have gradually noticed the importance of environmental problems, it is critical and considerable that more attention should be paid to examining the key elements that could influence environmental awareness, and pro-environmental behaviors.

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Contact email: rthuang0324@dragon.nchu.edu.tw