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與態度間之中介效應

Perceived Behavioral Control as a Mediator Between

Attitudes and Intentions toward

Marine Responsible Environmental Behavior



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「做研究就是在解決問題」，來自我的啟蒙老師—葉庭光教授，我開始憧憬，想成為一位研究者。「儘管朝你的目標努力奔跑」，來自我已離世的母親，我懷著您的愛，努力活著。「我會一直陪著你」來自我的倚靠邱昀，因為你我想看得更遠。「就在我們團隊一起努力」來自我的恩師—張俊彥教授，謝謝您，給我機會試著毫無保留的付出。從進入師大，我就一直承蒙在師長與同儕間的關懷與幫助，科教所的美雅助教幫助我走進與熟悉這個大家庭；顏妙璇教授以及楊芳瑩教授領我發現有興趣的研究領域；吳心楷教授啟發了我對於研究的想法與邏輯；方素琦教授使我意識語言的重要；林志鴻教授培養了我對統計的哲學觀，我想在此向科教所的教授們致上誠摯的感謝。此外，我想特別感謝教育系的葉坤靈教授以及陳伊琳教授對我在學習及生活上的扶持。

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摘要

近年來，人類活動的多樣性隨科技發展日趨複雜，經濟與文明成長的同時，伴隨著海洋資源的消逝與海洋環境的破壞。為因應此挑戰，如何改善環境政策以及教學場域中教師的課程設計，以培養公民具有環境負責行為被視為環境教育的核心目標。許多研究指出，行為意圖為預測海洋環境負責行為的有效因子。而態度，知覺行為控制被視為行為意圖的潛在因子。然而，有研究指出，受試者表現出對海洋環境負責行為的正向態度並未轉換為實際的行為，可見研究者對於海洋情境中的行為模型尚未釐清，尤其是態度與行為之關聯。此外，過去海洋環境負責行為模型的相關研究中，知覺行為控制與態度間之關聯研究相對稀少，本研究考慮態度並不單作為一情感因子，而是多層次的心理構面，將進行其與知覺行為控制及海洋環境負責行為之路徑分析，以建立行為模型作為政策及教育發展的參考。

本研究使用問卷測量大專生之態度，知覺行為控制，以及海洋環境負責行為意圖，共 79 位大專生之資料進行統計分析。結果顯示，受試者之態度及知覺行為控制均與海洋環境負責行為顯著相關，且知覺行為控制作為態度及海洋環境負責行為間之中介變項。根據本研究結果，環境政策及教育的制訂與執行方向應考慮知覺行為控制與態度之連結及發展歷程，主動創造學生及公民於環境負責行為中的成功經驗，或是降低執行環境負責相關任務時的困難度，以提升公民的對於海洋環境負責行為的知覺行為控制，藉此建立公民之海洋環境負責行為以維繫海洋資源之永續發展。

關鍵詞：海洋環境教育、態度、知覺行為控制、中介效應

Abstract

The marine environment has plunged into crisis with the growth of human activities. The enhancement of responsible environmental behavior (REB) requires policy and education to cultivate social awareness and actions to sustain marine resources. Several studies revealed that the intention serves as an effective predictor of actual behaviors. Furthermore, researchers generally acknowledge that attitudes and perceived behavioral control are potential factors toward behavior intention. However, some research has found that a positive attitude toward the environment does not translate into responsible environmental behavior. Additionally, the model of behavior in the marine context, especially the relationships between attitudes, perceived behavioral control, and the intention of responsible environmental behavior, are still not clear. Students' attitudes, perceived behavioral control, and intentions toward responsible marine environmental behavior (M-REB) were evaluated via questionnaires. The data from a total of 79 undergraduate students were analyzed. The results suggest that perceived behavioral control is the mediator between attitudes and intentions toward M-REB. This finding reveals the potential benefits of reconsidering the importance of perceived behavioral control in promoting M-REB and provides empirical evidence for future policy-makers in society and education.

Keywords: Marine environmental education, Attitude, Perceived behavioral control, Mediation effect

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1. Introduction

Taiwan, an island state located in the west Pacific, is characteristic of its great ecological diversity shaped by the ocean. However, a rapid decline in marine resources due to habitat destruction, overfishing, and pollution has become a trial for both the marine environment and human beings [1,2]. There is a need to build responsible marine environmental behavior (M-REB) to sustain the marine environment through the educational and policy-making processes [3,4]. Locally, *National Ocean Policy White Paper* was launched to maintain marine resources and orient the development of technology [46]. Internationally, *Ocean literacy* presented by National Marine Educators Association (NMEA) has multiple aspects or principles and fundamental concepts [5]. M-REB, such as collective actions, has been regarded as the core aim of ocean literacy [6]. M-REB and active citizens' development have become the ultimate environmental education goal [7,8].

Both M-REB and REB pursue a similar goal and comprise same psychological components and behavior categories. However, marine issues usually involve dynamic mechanisms and complex/systematic knowledge. For instance, the marine issue is inextricably interconnected with Earth materials and natural phenomena, and thus is constantly changing. Moreover, most human activities are not directly marine-based [9]. For example, only about 40% of the world's population lives in coastal areas [10,11]. People usually do not understand that their everyday actions can impact the ocean. Stern et al. noted that experience in nature as a child is an important factor for their concern for the environment as an adult [12]. Due to the dissimilarity of environmental experiences between the marine and general environment, people's perceptions toward the marine environment might be slightly different from the general environment. Moreover, the relative contributions of the psychological components to REB or M-REB may be different. With this in mind, the promotion of citizens' M-REB requires more relevant studies to clarify its mechanism.

Several attempts have been made to construct a model of M-REB. Researchers generally acknowledge that one's attitude is a potential REB factor [4,13–15]. However, a growing body of literature suggests a positive attitude does not translate into actual behaviors. Ajzen and Fishbein [16] and Cottrell [15] indicated that the early studies on attitudes as an explanatory factor for a change in human behaviors revealed that a strong relationship between attitudes and overt behaviors had not been supported. In recent years, Chen and Tsai [17] investigated marine environmental awareness among university students in Taiwan. They found that students possess attitudes toward the marine environment but do not actively engage in environmental actions.

According to Heberlein and Black [18], and Ajzen [19], predicting human behaviors is hardly accurate through a single facet such as attitudes due to human complexity. Cottrell [15] also noted that research efforts now are apt to focus more on when attitudes predict behaviors rather than whether attitudes predict behaviors. To discover a possible mechanism for attitudes, we reviewed a series of studies on behaviors. Baron and Kenny [20] pointed out the mediator can explain how the independent focal variable can influence the dependent variable through a third variable. In this regard, we hypothesize that the relatively low correlation between attitudes and REB might be due to a mediation effect. To find the possible mediator variable, human social behaviors such as M-REB are partially under volitional control. Thus, perceived behavioral control (PBC) becomes a crucial antecedent [21,22]. The PBC variable can influence behavior implicitly through the mediation of behavioral intention and directly [19,23]. Numerous studies exploring behavioral models in varied contexts suggest that both attitudes and PBC relate to behavioral intentions [7,14,24,25]. Moreover, some evidence reveals that the relationship between attitudinal factors and intentions might be inconclusive as we exclude the contribution of PBC. Surveys such as that conducted by Desombre, et al. [26] showed that general teachers' low sense of efficacy could act as a mediator and exhibit less favorable attitudes toward inclusive education than special teachers. Paul et al. [22] examined the effects of environmental concern and PBC on purchase intention in the environmental context. The results suggested that environmental concern can influence purchase intention via an indirect effect through PBC.

To date, there is still much uncertainty about the relationship between attitudes and intentions toward M-REB. Based on previous studies, it seems reasonable to argue that a positive attitude does not translate into actual behaviors due to the indirect effect of PBC on the relationship between attitudes and M-REB. If we can understand this mechanism, implementing policies and educational instructions will be facilitated and foster citizens' REB. Therefore, the present study aims to address this issue by investigating the relationship between attitudes, PBC, and M-REB through path analysis. The research contained in this paper sought to answer: Can PBC serve as a mediator between M-REB attitudes and intentions in the marine context?

2. Materials and Methods

2.1. Subjects

In total, 79 undergraduate students who enrolled for a general education course in a national university were recruited in this study. All the participants are Han Chinese people. In Taiwan,

senior high school students who wish to pursue their studies at the tertiary level, must take the annual national competitive entrance examination. The university is a comprehensive university with an above-average entrance examination score. Participants in the current study come from a variety of departments. The characteristics of samples are presented in Table 1. Participants were asked to fill out an informed consent stating that they were volunteers and could end the questionnaire at any time. The consent contains the participant's name and phone number in case there were any future questions. After finishing the informed consent, each participant was asked to complete three questionnaires that includes items to assess three variables (intentions, attitudes, and PBC). All participants received a gift certificate (NTD 200, equal to USD 7.5) as compensation. A 5-point Likert-type scale was adopted to quantify these variables (1 = strongly disagree, 5 = strongly agree).

Table 1. The characteristics of samples

Variable	Categories	Student count
Gender	Male	33 (42%)
	Female	46 (58%)
College year	2 nd	17 (21%)
	3 rd	40 (51%)
	4 th	22 (28%)
Background	Natural sciences	42 (53%)
	Social sciences	37 (47%)

2.2. Instruments

2.2.1. Intentions toward Marine Responsible Environmental Behavior (M-REB instrument)

M-REB refers to the actions aimed at improving ocean environmental quality. REB contains a wide range of learned actions identified in five categories by Sia, Hungerford and Tomera [4], Hungerford and Peyton [27]: ecomanagement, consumerism, persuasion, legal actions, and political actions. The definition of this categorization is described in Table 2. However, our questionnaire excluded political actions due to fewer opportunities for undergraduate students to attend political actions. Eight items assess intentions toward M- REB (e.g., “I am willing to support marine laws against marine environmental disruptions”; “I am willing to take public transportation to reduce carbon emissions”).

Table 2. The category of responsible environmental behavior

Types	Definition
Ecomanagement	Any physical action taken by an individual aimed directly at maintaining or improving the existing ecosystems.
Consumerism	An economic threat by an individual aimed at some form of behavioral modification.
Persuasion	An effort to verbally motivate people to take positive environmental actions.
Legal action	Any action taken by an individual aimed at some aspect of environmental law enforcement.

2.2.2. Attitudes toward M-REB (Attitudes Instrument)

Attitudes toward behavior refer to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question [19]. According to Eagly and Chaiken [28], attitudes are believed to be a function that represents one's perceived consequence and outcome evaluation. An individual tends to possess a favorable attitude while the outcome evaluation is positive, and thereby he/she is more likely to engage in the specific behavior [7,19].

To enhance the validity of prediction on one's behavior, Norman [29] suggests that the assessments of two attitudinal components (cognitive and affective) should be considered. The affective component refers to an individual's general positive/negative feeling toward a certain issue. The cognitive component consists of the individual's belief in the importance of a certain issue. Based on previous studies, the items were designed to measure attitudes through three observed variables, which are interest (whether the specific behavior is interest), favor (whether the specific behavior is positive), and value (whether the specific behavior is important). Twenty-four items assess REB attitudes in the marine environmental context (e.g., "For me, participating beach clean-up is interesting/positive/important"; "For me, bringing my shopping bag is interesting/positive/important").

2.2.3. Perceived Behavioral Control toward M-REB (PBC instrument)

PBC refers to people's perception of the ease or difficulty of performing the behavior of interest [19]. Concerning the perceived ability to perform a behavior, a similar term "self-efficacy" proposed by Bandura, et al. [30] is included in the present study. According to Van Dintter, et al. [31], Bandura [32], self-efficacy helps individuals decide how much effort they will spend on a task and how long they will persist when experiencing difficulties and how resilient they will appear in detrimental situations. Hines, Hungerford and Tomera [7] has noted that the perception of how well one can control factors in the behavioral context may facilitate or constrain the specific action. Moreover, Hines's team reviewed a number of studies on intentions and self-confidence. These studies suggest that one's intentions will be lower as an individual holds little control over a certain behavior, even if he/she demonstrates a positive attitude. The finding is similar to our argument that PBC plays a more vital role in the prediction of intentions than attitudes. 8 items assess PBC toward REB in the marine environmental context (e.g., "It is easy for me to persuade others into bringing their shopping bag"; "It is easy for me to avoid buying microbead-containing products").

2.3. Analysis

Data were analyzed by IBM® SPSS version 23. To examine whether PBC plays a mediator between attitudes and intentions, the regression model provided by Baron and Kenny [20] and a statistical technique named the Sobel test proposed by MacKinnon and Dwyer [33] were used. According to this framework, the regression analyses through three paths are prerequisites for Sobel test. First, attitudes require to be significantly related to intentions and PBC, respectively. Second, PBC needs to be significantly related to intentions. Third, the relationship between attitudes and intention should be declined as we take PBC into consideration. The Sobel test [34] is conducted to determine the relationships of the study because it is a commonly used instrument for testing whether a mediator variable significantly carries the influence of an independent variable to a dependent variable. By conducting the multivariate method, Sobel test can indicate which model components require to be strengthened.

The formula of Sobel test can be described as $s = \sqrt{\hat{a}^2 s_b^2 + \hat{b}^2 s_a^2}$; $z = \frac{a \times b}{s}$ (Figure 1).

Once the z-value of is more than 1.96, it will reach the significant level of $\alpha = 0.05$.

In other words, the Sobel test can provide a statistical index for the researcher to compare the degree of direct and indirect effects. Finally, previous studies have shown that demographic factors are important predictors of REB. Thus, the influences of sex, years in school, learning background (natural sciences or social sciences) on M-REB, attitudes, and PBC will also be measured.

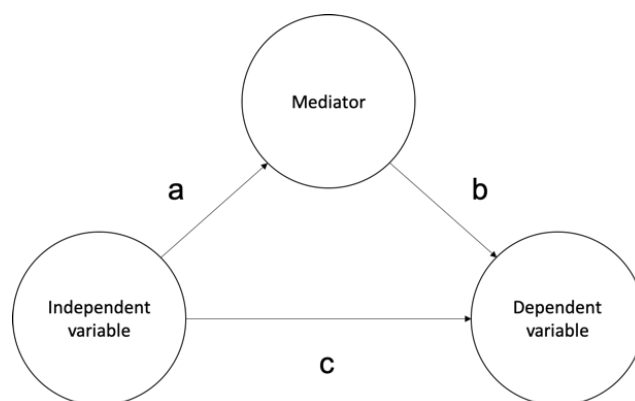


Figure 1. Sobel test (a: the regression coefficient of the independent variable to the mediator; b: the regression coefficient of the mediator to the dependent variable)

3. Results

First, the results of descriptive statistics for all the constructs are shown in Table 3. The internal consistency/reliability of items were established with Cronbach’s α (intention items = 0.86; attitude items = 0.95; PBC items = 0.76). According to Cortina [47], the value of α should be more than 0.70.

Table 3. Descriptive statistics for items

Instruments	Mean (SD)
Intentions Instrument	3.87 (0.66)
Attitudes Instrument	4.08 (0.62)
Perceived Behavioral Control Instrument	3.89 (0.57)

Second, through the correlation analysis, attitudes and PBC are positively correlated to intentions (Table 4), with Pearson coefficient (attitudes = 0.39, PBC = 0.41). Additionally, all the

demographic factors (gender, college year, and background) are not significant to M-REB (Table 4; Table 5). Only individuals' college year is positively correlated to their attitudes (0.23) and PBC (0.23).

Table 4. Correlation of variables

	College Year	M-REB	Attitudes	PBC
College year	-			
M-REB	0.08	-		
Attitudes	0.23*	0.39**	-	
PBC	0.23*	0.41**	0.59**	-

* = $p < .05$; ** = $p < .01$.

M-REB: Marine responsible environmental behavior intentions. PBC: Perceived behavioral control

Table 5. T-test of the demographic factors (t-value)

	Mean (SD)		t
	Gender		
	Male	Female	
M-REB	3.75 (0.51)	3.96 (0.75)	1.45
Attitudes	3.94 (0.64)	4.18 (0.59)	1.77
PBC	3.76 (0.64)	3.98 (0.50)	1.70
	Background		
	Natural sciences	Social sciences	
M-REB	3.86 (0.70)	3.89 (0.64)	0.19
Attitudes	4.03 (0.76)	4.12 (0.49)	0.60
PBC	3.87 (0.60)	3.90 (0.54)	0.38

Third, we tested the mediation effect through the Sobel test. The hypothesis test based on regression results is shown in Table 6. This test suggests that the direct effect of attitudes on intentions is significant with the unstandardized regression coefficient = 0.42. However, when we consider PBC as a mediator, this direct effect becomes non-significant. In other words, the relationship between attitudes and intention is declined as we consider PBC. Meanwhile, The results Sobel test (Figure 2) suggest that the significant mediation effect of PBC on the relationship between attitudes and intentions is supported ($z = 2.09$, $s = 0.09$, indirect effect = 0.18).

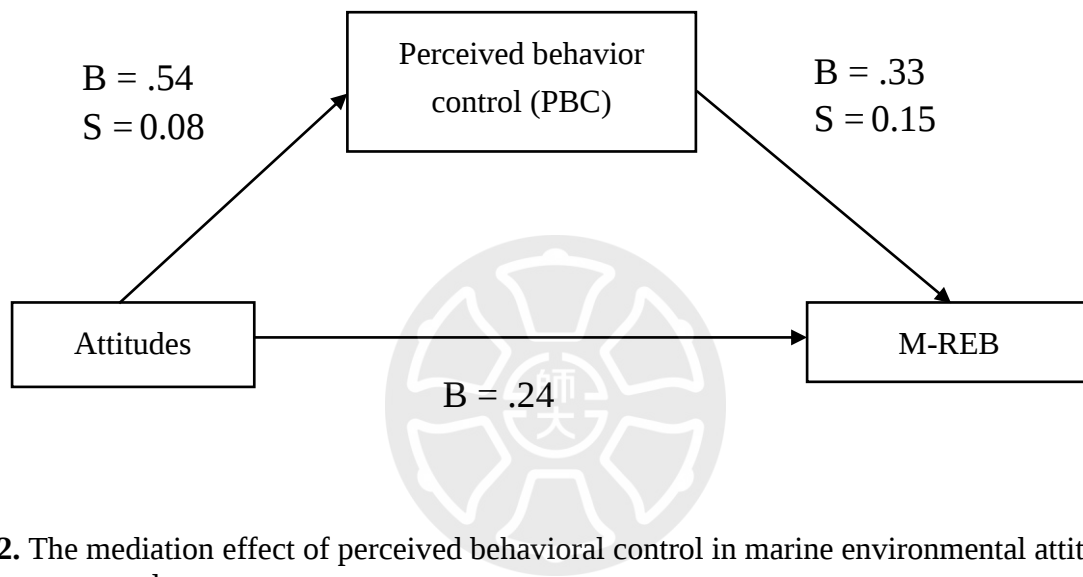
Table 6. Hypothesis test based on regression results

Variables	B	Std. error	t	Sig.
Att→M-REB	0.42	0.11	3.68	< .001
Att→PBC	0.54	0.08	6.47	< .001
PBC→M-REB (considering Att)	0.33	0.15	2.19	0.03
Att→M-REB (considering PBC)	0.24	0.14	1.73	0.09

Att: Attitudes

M-REB: Marine responsible environmental behavior intentions

PBC: Perceived behavioral control

**Figure 2.** The mediation effect of perceived behavioral control in marine environmental attitude-behavior correspondence.

4. Discussion

4.1. General Discussion

The present study was conducted to investigate the relationship between attitudes, PBC, M-REB intentions, and demographic factors in the marine environmental context. In addition, we completed a mediation test to determine whether attitudes influence intentions via an indirect effect of PBC. The results of descriptive statistics reflect the relative high level of participants' intention (Mean = 3.87), attitudes (Mean = 4.08), and PBC (Mean = 3.89). Meanwhile, we found a significant correlation between attitudes, PBC, and intentions. These results are consistent with previous studies of REB [14,24,25]. However, demographic factors such as gender, grade, and

learning background are not significantly related to M-REB. This finding is consistent with a postal survey of pro-environmental behavior conducted by Whitmarsh and O'Neill [35].

One of the main endeavors within environmental education is to clarify the mechanism between attitudes and behaviors. This concern is aligned with our initial purpose to explore when attitudes predict behaviors reliably; the Sobel test (mediation test) was adopted to address this issue. The mediation test results show that PBC plays a significant mediator between attitudes and intentions toward REB in the marine environmental context. According to Frazier, et al. [36], a mediator can explain why or how its predictor leads to its outcome variable. In other words, our findings imply that attitudes influence M-REB via the indirect effect of PBC. These results support the previous argument that the relationship between attitudes and M-REB might decline due to the mediation effect of PBC. In early studies, Ajzen [19] also demonstrated a correlation between attitudes and PBC. The tenuous relationship between attitudes and behavior is not a new issue. Boubonari, et al. [37] found that a high score in attitudes is inconsistent with a low score in collective actions. In this regard, the present study provides statistical evidence that the reason that a high attitude does not translate into actual behavior might be due to the level of one's PBC toward behavior. Therefore, the enhancement of PBC might be crucial to cultivate individual M-REB rather than treat attitudes as the sole predictor. This finding is similar to the review study by Van Dinther, Dochy and Segers [31], self-efficacy/PBC influences motivation and cognition by interacting with the student's task interest, task persistence, the goal they set, the choices they make, and their use of cognitive, metacognitive and self-regulatory strategies.

4.2. Limitations

There are some limitations important to recognize and hold implications for future practice. It is noteworthy that the participants in the study are all Han Chinese people. According to Kim and Omizo [38], Atkinson, et al. [39], racial identity is directly related to a positive self-concept. Fischer and Moradi [40] also pointed out that self-efficacy is closely related to ethnic and racial identity. A demographic investigation conducted by Constantine, et al. [41] to assess the relationship between self-efficacy and depression in African, Asian, and Latin American international students has shown that the degree of self-efficacy of both Asian and African students is significantly lower than Latin American students. Regarding our finding of a mediation effect, PBC serves as a crucial part of building individuals' M-REB. It is reasonable to hypothesize that promoting citizens' REB is easier in Americans with a higher degree of PBC than Asians. The different levels of PBC also reveal that the formulation of policies and educational instructions should be varied among distinct ethnic groups. To promote the M-REB of

people who already possess higher PBC than western students, the strategies can switch into providing opportunities and resources such as recycling tools to engage them in real behavior. As for students whose PBC are at a relatively low level, a well-designed curriculum which can offer mastery experiences and alleviate the difficulty of performing M-REB might be necessary. Furthermore, the pattern of relations found in the present study might be slightly different due to the diversity of racial/cultural backgrounds. Therefore, we acknowledge that future studies in exploring whether the relationships between attitudes, PBC, and M-REB are similar to the result of the current study in terms of different cultural backgrounds.

Apart from racial/cultural backgrounds, the difference between M-REB and general REB comes with an important caveat. According to Lee et al. [42], we still know little about the relationship between different types of environmental behavior. In this regard, we are unable to definitively claim that this mediation effect can fully apply to general REB. Therefore, one of our future works aims to investigate whether this mediation effect can apply to different environmental contexts.

4.3. Conclusion and Implications

Our findings have clear implications that provide suggestions for the development of policies and education instructions. To promote individuals' M-REB, the facilitation of their PBC/self-efficacy is necessary. There are four main sources described by Bandura [43] to foster one's PBC/self-efficacy: enactive mastery experiences, vicarious experience, verbal persuasion, and physiological/affective states. Enactive mastery experiences are authentic successes in dealing with a particular situation. According to Palmer [44], these mastery experiences are the most powerful source of creating a strong sense of efficacy due to authentic evidence that an individual can succeed in a certain task. Wen and Lu [9] also noted that involvement in field trips indirectly influences students' behaviors toward the marine environmental protection. The second source of improving one's self-efficacy is the vicarious experience, which refers to observational experiences provided by social models. In other words, individuals perceive the information about their capabilities by observing significant others, and thereby evaluate the difficulty in performing a certain task [45]. The study from Stern et al. also suggested that students who expressed known adults (parents, teacher) as role models exhibited a higher score on the responsible environmental index [12]. The third source is verbal persuasion. People are more willing to persist in a challenging situation if significant others demonstrate high confidence in their capabilities than if they express doubts. The fourth source concerns one's physiological state. People derive efficacy information from their physiological indexes such as heart rate and sweating. These symptoms

signaling anxiety might be interpreted as a lack of necessary skills [45]. In summary, the direction of policy-making processes and education should not only emphasize the importance of one's attitudes toward the environment but also strive for the establishment of one's PBC/self-efficacy by creating opportunities to absorb successful experiences or decreasing the difficulty of performing M-REB.

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6. Appendixes

「海洋相關行為意圖」調查問卷

親愛的同學您好：

這是一份有關海洋相關行為意圖的匿名問卷，主要是想了解影響大學生海洋相關行為意圖之因素，我們非常需要您客觀的作答。

本問卷所得的結果僅供學術研究用

【填答說明】本問卷共分四部分，請依據您的**實際情形**，在 內打勾。

～作答開始，祝您填答順利～

第一部分 基本資料

為了使前後資料資料能連貫，因此我們需要您個人的基本資料，以便研究者進一步分析及了解所獲得之數據，您回答的資料，研究者將予以保密，請安心回答，謝謝您！

1. 就讀年級： (1)一年級 (2)二年級 (3)三年級 (4)四年級 (5)其他年級
2. 生理性別： (1)男 (2)女
3. 就讀科系：_____

第二部分 海洋相關行為意圖調查

此部分是有關於您對海洋相關行為意圖之調查，請您仔細閱讀題目後，勾選一個跟您本身情形最接近之選項。

	非常不同意	有點不同意	普通	有點同意	非常同意
1. 我會多搭乘大眾運輸工具以減少碳排放					
2. 我會花時間與精神去淨灘					
3. 我會在購物時自備環保袋以減少海洋的塑膠污染					
4. 我會避免購買含有塑膠微粒的產品					
5. 我會說服他人自備環保袋以減少海洋污染					
6. 我會主動向他人說明環保的重要性					
7. 我會支持有關單位從嚴取締破壞海洋環境之行為 (如排放廢水、亂倒垃圾廢土等)					
8. 我會支持保護海洋環境之相關立法 (如限制塑膠產品使用、限制漁獲量等)					
9. 我會想攻讀海洋相關研究所					
10. 我會想參加海洋相關之演講或工作坊					
11. 我會想從事養殖漁業相關工作					
12. 我會想從事海洋相關的觀光產業					
13. 我會想從事海洋科學研究與工程的相關工作					
14. 我會想從事航運業相關工作					

第三部分 海洋行為意圖之因素調查

此部分是有關於您對海洋相關行為意圖因素之調查，請您仔細閱讀題目後，勾選一個跟您本身情形最接近之選項。

信念（我覺得做這件事能產生正向的結果）

興趣（我對做這件事感興趣）

價值（去做這件事對我而言是重要的）

是影響我們對某一行為之態度的重要元素

請針對此三個構面各勾選一個最符合您本身情形之選

非常
不同
意

有點
不同
意

普
通

有
點
同
意

非
常
同
意

1. 我對多搭乘大眾運輸工具以減少碳排放的

→ 信念.....

→ 興趣.....

→ 價值.....

2. 我對淨灘的

信念.....

興趣.....

價值.....

3. 我對在購物時自備環保袋以減少海洋塑膠污染的

信念.....

興趣.....

價值.....

4. 我對避免購買含有塑膠微粒產品的

信念.....

興趣.....

價值.....

5. 我對說服他人自備環保袋以減少海洋污染的

信念.....

興趣.....

價值.....

6. 我對主動向他人說明環保重要性的

信念.....

興趣.....

價值.....

7. 我對支持有關單位從嚴取締破壞海洋環境之行為的

信念.....

興趣.....

價值.....

信念（我覺得做這件事能產生正向的結果） 興趣（我對做這件事感興趣） 價值（去做這件事對我而言是重要的） 是影響我們對某一行為之態度的重要元素 請針對此三個構面各勾選一個最符合您本身情形之選	非常不同意	有點不同意	普通	有點同意	非常同意
8. 我對支持保護海洋環境之相關立法的 信念..... 興趣..... 價值.....					
9. 我對攻讀海洋相關研究所的 信念..... 興趣..... 價值.....					
10. 我對參加海洋相關之演講或工作坊的 信念..... 興趣..... 價值.....					
11. 我對從事養殖漁業相關工作的 信念..... 興趣..... 價值.....					
12. 我對從事海洋相關觀光產業的 信念..... 興趣..... 價值.....					
13. 我對從事海洋科學研究與工程相關工作的 信念..... 興趣..... 價值.....					
14. 我對從事航運業相關工作的 信念..... 興趣..... 價值.....					



知覺行為控制： 是影響我們對某一行為意圖的重要元素 請勾選 <u>一個</u> 最符合您本身情形之選項	非常 不同 意	有 點 不 同 意	普 通	有 點 同 意	非 常 同 意
15. 對我來說，多搭乘大眾運輸工具以減少碳排放，會是一件容易的事					
16. 對我來說，淨灘，會是一件容易的事					
17. 對我來說，在購物時自備環保袋以減少海洋的塑膠污染，會是一件容易的事					
18. 對我來說，避免購買含有塑膠微粒的產品，會是一件容易的事					
19. 對我來說，說服他人他人自備環保袋以減少海洋污染，會是一件容易的事					
20. 對我來說，主動向他人說明環保的重要性，會是一件容易的事					
21. 對我來說，支持有關單位從嚴取締破壞海洋環境之行為，會是一件容易的事					
22. 對我來說，支持保護海洋環境之相關立法，會是一件容易的事					
23. 對我來說，攻讀海洋相關研究所，會是一件容易的事					
24. 對我來說，參加海洋相關的演講或工作坊，會是一件容易的事					
25. 對我來說，從事養殖漁業相關工作，會是一件容易的事					
26. 對我來說，從事海洋相關觀光產業，會是一件容易的事					
27. 對我來說，從事海洋科學研究或工程相關工作，會是一件容易的事					
28. 對我來說，不要亂丟垃圾，會是一件糟糕的事					
29. 對我來說，從事航運業，會是一件容易的事					

主觀規範： 是影響我們對某一行為意圖的重要元素 請勾選一個最符合您本身情形之選項	非常 不同 意	有 點 不 同 意	普 通	有 點 同 意	非 常 同 意
30. 我身邊的人大都認為，多搭乘大眾運輸工具以減少碳排放，是一件重要或正向的事					
31. 我身邊的人大都認為，淨灘是一件重要或正向的事					
32. 我身邊的人大都認為，在購物時自備環保袋以減少海洋的塑膠污染，是一件重要或正向的事					
33. 我身邊的人大都認為，避免購買含有塑膠微粒的產品，是一件重要或正向的事					
34. 我身邊的人大都認為，說服他人他人自備環保袋以減少海洋污染，是一件重要或正向的事					
35. 我身邊的人大都認為，主動向他人說明環保的重要性，是一件重要或正向的事					
36. 我身邊的人大都認為，支持有關單位從嚴取締破壞海洋環境之行為，是一件重要或正向的事					
37. 我身邊的人大都認為，支持保護海洋環境之相關立法，是一件重要或正向的事					
38. 我身邊的人大都認為，攻讀海洋相關研究所，是一件重要或正向的事					
39. 我身邊的人大都認為，參加海洋相關的演講或工作坊，是一件重要或正向的事					
40. 我身邊的人大都認為，從事養殖漁業相關工作，是一件重要或正向的事					
41. 我身邊的人大都認為，從事海洋相關觀光產業，是一件重要或正向的事					
42. 我身邊的人大都認為，從事海洋科學研究或工程相關工作，是一件重要或正向的事					
43. 我身邊的人大都認為，從事航運業，是一件重要或正向的事					