THE RELATIONSHIP BETWEEN MARINE ENVIRONMENTAL AWARENESS, INTENTION AND PRO-ENVIRONMENTAL BEHAVIOR AMONG UNIVERSITY STUDENTS IN VIETNAM

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ABSTRACT

Sustainable development is one of the key strategic goals for a country's socio-economic development, and the issue of marine environmental protection is also considered an important challenge for both developed and developing countries. The objective of this study is to investigate the relationship between marine environmental awareness, behavioral intention and pro-environmental behavior among university students in Vietnam. Because students are the young generation that has been educated at an adult level, they have a great role to lead the younger generation, and also make contributions through both propaganda and beneficial products for the future marine environment. The author conducted a survey with 450 university students across Vietnam, and by using Bootstrapping technique through Hayes Process Macro Model 4, research results show that there is a positive relationship between awareness, intention and pro-environmental behavior, in which behavioral intention is the mediating factor between the impact of marine environmental awareness on pro-environmental behavior. The research results bring important implications for both students and educational administrators when it is necessary to provide more knowledge about the current situation and impacts on the environment through lectures; organize marine environment-themed student days as well as participate in volunteer activities and practical programs to raise awareness and promote pro-environmental behavior. In addition, student scientific research activities should also be promoted towards the issue of environmental protection so that students can discover and bring about inventions, which are applicable to marine environmental protection.

Keywords: Behavioural intention, Marine environment, Marine eenvironmental aawareness, Pro-eenvironmental bbehaviour, Sustainable development.

1. Introduction

Marine environmental pollution is currently a common social and global concern. Because it is considered the leading agent causing serious impacts and consequences on the environment and public health. Gkargkavouzi et al (2020) emphasized that marine and coastal ecosystems around the world face imminent threats caused by human activities, which can have significant consequences on ecological, societal, and economic aspects. Reality has shown that the ocean is seriously threatened by human behavior andit is estimated that the weight of plastic waste will surpass fish in the ocean by 2050 as well as millions of tons of poorly managed waste are dumped into the ocean each year could result in a planetary crisis with more than 100 million marine animals lost each year and ocean ecosystems destroyed (Koutouki&Phillips, 2016). As proposed through the Sustainable Development Goal 14 (SDG14) by the United Nations, the sentiment about a growing realization that societies need to actively participate in addressing the challenges of marine conservationis increasing day by day due to the importance of marine resourcesto human life and the current marine environmental issues (Gkargkavouzi et al., 2020; Koutouki&Phillips, 2016).

In the context of human overexploitation of ocean nature, the public engagement becomes a pivotal opportunity to foster a transformative shift in the relationship between individuals and the ocean (Chen&Tsai, 2016). By involving people in the awareness, management and restoration of marine ecosystems, it may address the deterioration plaguing ocean waters (Gkargkavouzi et al., 2020; Jefferson et al., 2021; Yoon et al. 2021). According to Rannikko (1996), environmental awareness can play as an important catalyst to raise environmental movements for people's endeavors. However, the study on marine environmental perception and awareness remains limited (Engel et al., 2021; Gkargkavouzi et al., 2020; Jefferson et al., 2021; Yoon et al., 2021), especially in the context of research population as university students of developing countries (Chen&Tsai, 2016; Mallick et al., 2023;Umuhire&Fang, 2016). Furthermore, several researchers have proposed that individuals' responsiveness to various hazards can affect the marine environment, but they may not establish a link between their awareness, behavioral intention and their real actions. This lack of association can be attributed to a perceived absenceof responsibility or selfefficacy, passivity, a limited access to information, or a prevailing distrustin organizations that mediate responses to these challenges (Curnock et al., 2019; Hofman et al., 2020; Yoon et al., 2021).

In Vietnam, according to Associate professorNguyen Chu Hoi, who isthe member of the Steering Committee of the Global Ocean Forum (GOF) and theformer deputy director of the Vietnam Administration of Seas and Islands, one of the biggest challenges in implementing the marine sustainable development strategies today is the reality of waste pollution (CPVON, 2023). This threatens the marine ecosystem and seafood resources, thereby affecting the livelihoods of

millions of Vietnamese residents. Currently, Vietnam ranks fourth in the world in marine debris pollution, especially plastic waste.To contribute to protecting the environment in general and the marine environment in particular, each person, especially the young generation as students, needs to raise awareness, pro-environmentalbehaviors and responsibilityin protecting the marine environment (Chen&Tsai, 2016; Umuhire&Fang, 2016). The objective of the study is to investigate the relationship between marine environmental awareness, intention and pro-environmental behavior among university students in Vietnam.

In addition to the introduction part, the study includes the theoretical framework and hypothesis development section on the relationship between environmental awareness, intention and pro-environmental behavior based on theTheory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB). The author then proposed the research model and used SPSS 25 to present the research results, this will be the basis to provide implications to enhance the responsibility of protecting the marine environment of students and Vietnamese people in general.

2. Literature Review and Hypothesis Development

2.1 Marine Environmental Awareness

The term "marine environmental awareness" was developed from environmental awareness in the context of the increase of marine environmental issues. As Yeung (1998) defined, environmental awareness is the capacity of an individual to comprehend the intricacies of environmental processes and predicaments, as well as their level of concern for environmental well-being, and the degree to which they are devoted to environmentally responsible actions in their daily lives. It is perceived as a symbiotic connection between humans and their environment, encompassing three dimensions: environmental attitude, knowledge and behavior (Rannikko, 1996). Environmental awareness is widely regarded as a fundamental pillar of environmental sustainability (Holt & Barkemeyer, 2012; Tran, 2006). According to Umuhire&Fang (2016), marine environmental awareness stimulates active participation in the development and implementation of ocean policies, which in turn paves the way for the sustainable utilization and management of oceanic resources. It plays a pivotal role as a means of channeling policies that support the preservation of a thriving marine ecosystem and the enhancement of effective marine governance (Mckinley & Fletcher, 2011). Numerous studies have delved into the subject of marine environmental awareness (Chen&Tsai, 2016; Fletcheret al., 2009; Greely, 2008; Lucrezi, 2022; Ozden, 2008; Steel et al., 2005; Umuhire&Fang, 2016; Zaheed, 2011),howeverthese research just primarily focus on the understanding of terms, and evaluate the research population through descriptive statistics, but have not examine whether the awareness may actually lead to protective and pro-environmental behaviors in different contexts or not.

2.2 Behavioural Intention

The theory of reasoned action (TRA) introduced by Ajzen & Fishbein (1975; 1980) incorporates the concept of behavioral intention, which pertains to an individual's belief in the likelihood of performing a specific action. Put it simply, this term refers to the extent to which individuals are aware of their inclination to engage or abstain from a particular behavior. Ajzen (1991) describes intention as a motivational factor that reflects an individual's determination to carry out a specific behavior. Building upon the TRA theory, Ajzen (2002) further developed the theory of planned behavior (TPB), which includes additional components such as perceived behavioral control and self-efficacy to delineate intention more comprehensively. As defined by Ramirez-Correa et al. (2019), behavioral intention represents an individual's deliberate readiness to either participate in or refrain from future actions. Some studies argue that behavioral intention has an immediate impact on actual behavior and can serve as an accurate predictor, however, accurately measuring the adoption of behavior in its true form poses challenges (Mottus et al., 2020). In the context of marine, behavioral intention to adopt marine protection behaviors and its connection to other variableswas also quite limited investigated (Gkargkavouzi et al., 2020).Lange&Dewitte (2019) mentioned thatthis term has been explored across a wide range of disciplines of the behavioral sciences including environmental psychology, organizational psychology, behavior analysis, environmental educationand consumer research, however, it has not delved deeply into the context of marine environment.

2.3 Pro-Environmental Behavior

In individual level, those actions that contribute to the sustainability of the environment is known as pro-environmental behaviors. According to Mesmer-Magnus et al. (2012), these type of behaviors encompass various activities, such as conserving energy, minimizing waste, participating in environmental activism, and engaging in recycling efforts. These positive environmental behaviors are voluntary and volitionalchoices initiated by individuals themselves (Ones et al., 2015). There are two primary approaches utilized in the study of pro-environmental behavior: an impact-oriented perspective and an intention-focused perspective (Stern, 2000).According to Stern (2000), this term can be considered as an activity that aims to protect the ecological environment. The impact-oriented perspective views pro-environmental behavior as actions that contribute to environmental sustainability, which focuses on the outcomes of the behavior rather than the underlying motivation (Steg & Vlek, 2009). This perspective emphasizes behaviors that conserve resources on land, ocean water or energy. The latter one definespro-environmental behavioras the extent to which individuals have a desire to achieve positive environmental outcomes (Kaiser, 1998). This viewpoint places emphasis on the underlying motivations driving individuals' actions, consequently, from this perspective, pro-

environmental behavior is defined as actions intended to contribute to the sustainability of the natural environment (Schultz&Kaiser, 2012).

2.4 Relationship Between Marine Environmental Awareness, Behavioral Intention And Pro-Environmental Behavior

The research is based on behavioral theories, which are increasingly gaining attraction in the examination of public awareness and perceptions within environmental and marine contexts (Martin et al., 2017; Reddy et al., 2016), resource management, resource conservation, and economic valuation (Lopez-Mosquera et al., 2014; Pienaar et al., 2017).Notably, the TRA theory by Ajzen & Fishbein (1975; 1980) and its expanded version the TPB theory by Ajzen (1991; 2002) have emerged as the most widely employed socio-psychological models in explaining individuals' environmental behavior in conservation studies.TPB posits that a behavior to protect the environment is directly predicted by behavioral intention, which is influenced by attitudes towards the action, perceived behavioral control, and normative considerations (Wan et al., 2017). Accordingly, intention is shaped by behavioral beliefs concerning the potential outcomes of the action and the perceived costs and benefits, ultimately influencing one's favorable or unfavorable attitude towards the behavior. The TRA and TPB theories have been widely employed in numerous empirical studies to forecast various factors influencing environmental behaviors (Han, 2015). However, its application in the marine context, particularly in research on public perceptions, has been relatively limited (Gkargkavouzi et al., 2020).

Many previous empirical studies have shown a positive relationship between environmental awareness and behavioral intention to protect the environment.As in the study of Yang et al. (2020), the authors has found out the strong impact of environmentalawareness on pro-environmental behavioral intention by investigating nearly 43 thousand consumers from 39 countries.Or in the field of consumption, environmental awareness and knowledge also lead to the intention to use green restaurants (Hu et al., 2010).When individuals are aware of environmental issues, their concern level for environment may increase and lead to their knowledge about the environment condition (Yeung, 1998), therefore shapes their behavioral intentions to the ways to protect and support environment (Liu et al., 2020; Pan et al., 2018). In the context of marine, environmental awareness is considered as an important antecedent of pro-environmental behavioral intentionwhile awareness of marine problems in local areasmaybring about intention to mitigate the marine environmentissues (Gkargkavouzi et al., 2020; Hofman et al., 2020; Liu et al., 2021; Yoon et al., 2021). Based on these findings, the authors propose the hypothesis:

H1: Marine environmental awareness has a direct impact onbehavioral intentionamong university students in Vietnam.

One widely utilized concept for predicting pro-environmental behavior is the behavioral intentionframework developed by Ajzen & Fishbein (1975; 1980). This framework has been integrated into both the TRAand the TPB theories (Ajzen & Fishbein, 1975; 1980; Ajzen, 1991). Various models, including the influential environmental behavior model by Hines et al. (1987), have expanded upon TRA and TPB by incorporating behavioral intentionas a crucial factor in predicting pro-environmental behavior. According to Hines et al. (1987), behavioral intention serves as a direct determinant of pro-environmental behavior, mediating the influences of cognitive and personality variables.Or the study of Wang &Mangmeechai (2021) has concluded that behavioral intention towards the environment can lead to pro-environmental behavior through the policy implementation intention in China. Besides, studies by Arı & Yılmaz (2017); Yang et al. (2020) also concluded that behavioral intention plays a crucial role in understanding how individuals' awareness of the environment issues can effectively lead to their pro-environmental behaviors. Based on these findings, the authors propose the hypothesis:

H2: Behavioral intentionhas a direct impact onpro-environmental behavior among university students in Vietnam.

Previous research has made predictions regarding the positive influence of environmental awareness on pro-environmental behavior (Chan, 2001; Mainieri et al., 1997; Umuhire&Fang, 2016). By fostering a heightened sense of oceanic environmental consciousness, individuals become more inclined to engage as stakeholders in the formulation of ocean policies, while also encouraging them to adopt eco-friendly and sustainable behaviors in relation to the development and utilization of the ocean (Umuhire&Fang, 2016). Several other studies have provided evidence supporting the significant impact of environmental awareness on pro-environmental behavior. For instance, Ellen et al. (1991) discovered a substantial relationship between environmental concern and various pro-environmental actions, such as recycling and green consumption. Ishaswini & Datta (2011) also found a positive association between environmental concern and green purchasing behavior in the Indian context. Environmental awareness can be viewed as a positive response to a crisis that poses a threat to the survival or sustainable development of an organization or society, which may involve increased efforts and dedication to mitigate the threat (Yang et al., 2020). For marine issues, some recent studies conducted by Liu et al. (2020); Soares et al. (2021) showed that when individuals develop their awareness and knowledge about issues of the marine environment,supportive actions for environmental protection will beimplemented. Besides, one's awareness of the marine environment can also shape their environmental attitudes, behavioral intentions and then lead to pro-environmental behaviors (Liu et al., 2020; Yang et al., 2020). The mediating role of behavioral intention was also concluded in the TRA and TPB model as mentioned above.These findings lead to these following hypotheses:

H3: Marine environmental awareness has a direct impact onpro-environmental behavior among university students in Vietnam.

H4: Behavioral intention has a mediating effect between marine environmental awarenessand pro-environmental behavior among university students in Vietnam.

Based on thehypotheses given, the study proposes the research model asFigure 1 below:

Fig. 1.Proposed research model
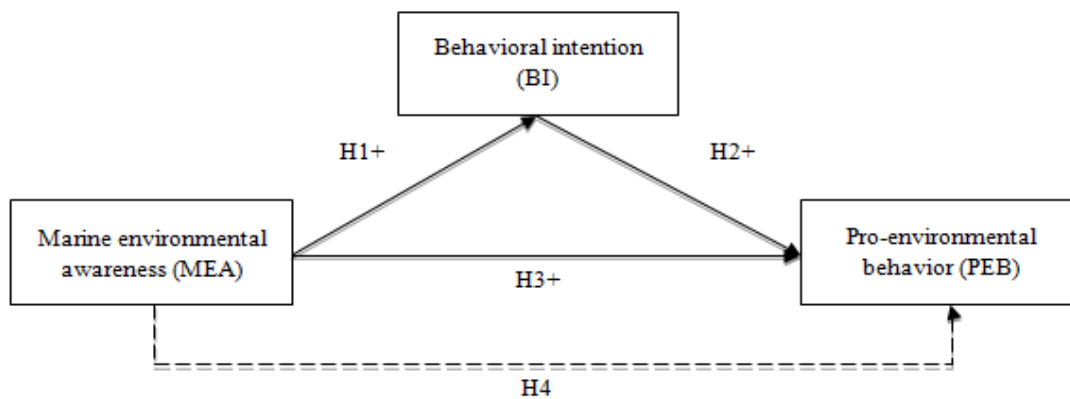
Source: Authors' analysis

3. Methodology

3.1. Measures

This study used an appropriate translation–back-translation procedures: forward translation, assessment, backward translation and assessment based on the criteria of clarity, common language and cultural adequacy. The official measurement scale was inherited and adapted from previous studies in the context of environmental issues, and constructed using a 5-point Likert scale from "(1) Strongly disagree" to "(5) Strongly agree". Marine environmental awareness was measured by Ozden (2008) with 8 items (coding from MEA1 to MEA8). Behavioral intention scale was adopted from the study of Pan et al. (2018) with 4 items (coding from BI1 to BI4). The scale of pro-environmental behaviorwith 6 items (coding from PEB1 to PEB6)was adopted from the study of Bissing-Olson et al. (2012).

3.2. Sample and data collection

Data was collected from university studentswho are currently studying in the three largest cities (Hanoi capital city, Danang and Ho Chi Minh city) in Vietnam during the first period of 2024.

The purpose to choose these cities is due to their most populous and developed cities and almost all universities are located there. According to Green (1991), to ensure regulations on regression analysis, the minimum sample size is 50 + 8*m (m is the number of independent variables, also known as predictors participating in the regression). According to Hair et al. (2014), to ensure regulations on EFA analysis applying the 5:1 ratio, the minimum sample size is 5*n (n is the number of items in all variables). To ensure reliability, the official survey was conducted with 450 valid responses from university students in Vietnam. The study used the stratified random sampling method when the demographics of respondents were considered as criterias andinvestigated to select the suitable respondent.

According to the data of the General Statistics Office of Vietnam in 2023, the population of university students is 2.1 millions people, in which more than 1.1 millions are female students. Accordingly, the demographics of respondents were presented in Table 1 below.The survey sample by gender was collected with 198 male students and 240 female students, which were equivalent to 44% and 53.3%. For the schooling year, junior students and senior students and above were quite balanced with nearly 28% while the percentage of freshman and sophomore students were a little lower with 19.8% and 24.9% respectively. Among 405 respondents, there were 294 students living in non-coastal cities and 156 from coastal ones, corresponding to 65.3% and 34.7%.

Table 1. Sample descriptive statistics

Characteristics		Frequency	Proportion (%)
Gender	Male	198	44%
	Female	240	53.3%
	Others	12	2.7%
Schooling year	Freshman	89	19.8%
	Sophomore	112	24.9%
	Junior	124	27.5%
	Senior and above	125	27.8%
Living location	Coastal city	156	34.7%
	Non-coastal city	294	65.3%

Sources: Authors' analysis

3.3. Data analysis

The study used SPSS 25 to analyze Cronbach's Alpha to evaluate the reliability of the scales, then performed exploratory factor analysis (EFA) to examine the relationship between items in

different variables. For this method, the study included Kaiser-Meyer-Olkin (KMO) test for sampling adequacy, Bartlett's test, Eigenvalues, Total Variance Explained and Factor loadings. Finally, the author tested the multivariate linear regression analysis by using Bootstrapping technique(Preacher & Hayes, 2004) through Hayes Process Macro Model 4by to conclude the hypotheses.

4. Findings and Discussion

In this study, all the scales showed very high reliability when Cronbach's Alpha of the variables MEA, BI and PEB were all in the range from 0.85 to 0.95, which were 0.919; 0.884; 0.927respectively. Another important coefficient is Corrected Item - Total Correlation as this value represents the correlation between each observed variable with the remaining variables in the scale. As we can see, all observed variables (indicators)for all three variables showed good values and are all greater than 0.3. It means the observed variables were all qualified. Regarding Cronbach's Alpha if Item Deleted, this coefficient for each indicator within the scale had a value smaller than the total Cronbach's Alpha coefficient of that scale. The result showed the high reliability of the scales and no observed variables need to be eliminated.

Table 3. Reliability test results

Variables	Cronbach's Alpha of the scale	Indicators	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Marine environmental awareness (MEA)	.919	MEA1	.713	.910
		MEA2	.697	.911
		MEA3	.734	.908
		MEA4	.757	.907
		MEA5	.683	.913
		MEA6	.760	.906
		MEA7	.758	.906
		MEA8	.743	.908
Behavioral intention (BI)	.884	BI1	.767	.843
		BI2	.765	.844
		BI3	.752	.849
		BI4	.706	.866
Pro-environmental behavior (PEB)	.927	PEB1	.766	.916
		PEB2	.817	.909
		PEB3	.787	.913
		PEB4	.776	.915
		PEB5	.820	.909
		PEB6	.758	.917

Sources: Authors' analysis

Regarding validity assessment, the authors then conducted EFA analysis for all the variables. For this research model, the relationship of variables is assumed to impact each other and there is more than one mediate variable and one dependent variable existed in the model, therefore, the author conducted separate EFA analysis for each factor. The values of KMO for MEA, BI and PEB scales reached 0.868; 0.808 and 0.899. These KMOs in the range of 0.5 to 1 showed the sufficient condition for factor analysis to be appropriate. The sig. of Bartlett's Test were all equal to 0.000. Besides, the Eigen values for all variables were greater than 1 and Total Variance Explained were all higher than 50%, which showed that the EFA model is appropriate.

Table 4. Validity test results

Variables	KMO	Sig Bartlett's Test	Initial Eigenvalues	Cumulative %
MEA	.868	.000	5.115	63.936
BI	.808	.000	2.967	74.184
PEB	.899	.000	4.393	73.220

Sources: Authors' analysis

The authors then tested the correlation between variables in the model based on Pearson's correlation index. The results showed that MEA correlated with BI andPEB with the coefficients of 0.778 and 0.766significantly at the 0.01 level. Besides, BI had a significantcorrelation with PEB at 0.832** at the 0.01 level.Overall, the results showed that all variables in the model were highly correlated, suitable to performthe regression analysis.

For multiple linear regression analysis, the authors conducted the Bootstrapping technique through Hayes Process Macro Model 4, which was summarized in Table 5.The impact of MEA on BI was firstly examined. The result showed the R^2 coefficient of 0.7778, standardized coefficients β = 0.7778> 0 and p-value = 0.000 pointing out that MEA has a direct impact on BI, thus, the hypothesis H1 is supported. The single impact of BI on PEB and MEA on PEB were also investigated and the result showed that R^2 = 0.8537 and 0.7665, while β were equal to 0.5981 and 0.7665 respectively and p-values were all equal to 0.000. These figures all concluded that BI has a direct impact on PEB and MEA also has a direct impact on PEB. Therefore, hypotheses H2 and H3 are all supported.

Table 5.Multiple linear regression analysis result

Hypothesis	R^2	Standardized coefficients (β)	T Statistics	PValues	LLCI	ULCI	Result
H1: MEA -> BI	.7778	.7778	26.1897	.000	.8041	.9346	Supported
H2: BI ->PEB	.8537	.5981	15.2644	.000	.4969	.6437	Supported
H3: MEA ->PEB	.7665	.7665	25.2598	.000	.7534	.8805	Supported
H4: MEA ->BI ->PEB	.8537	.3013	7.6893	.000	.2391	.4032	Supported

Sources: Authors' analysis

Finally, the authors tested the mediating role of BI in the relationship between MEA and PEB. The results showed that $R^2 = 0.8537$, β = 0.3013> 0 and p-value = 0.000. For the analysis of completely standardized indirect effect(s) of MEA on PEB through BI, the bootstrap confidence interval in this case did not contain the value 0 due to the range of BootLLCI = 0.3737and BootULCI = 0.5401. The result indicated that MEA has an indirect impact on PEB through BI with the indirect effect of 0.4652. Therefore, H4 is also supported that "behavioral intention has as a mediating effect between marine environmental awareness and pro-environmental behavior". In particular, the R^2 coefficient of the multiple linear regression analysis all showed values ranging from 0.7 and higher, which means a high suitability of the research model.

Based on the fact that previous studies only focused on understanding terms and examining and comparing mean differences between demographic characteristics of population regarding marine environmental awareness to propose recommendations (Chen & Tsai, 2016; Fletcher et al., 2009; Greely, 2008; Lucrezi, 2008; Steel et al., 2016; Zaheed, 2011), our study provides a total impact assessment ofmarine environmental awareness to the behavioral intention and pro-environmental behavior of individuals, especially students who are considered the future generation of a country. Based on two important behavioral theories, TRA and TPB, our research findings indicate that, when students can form their marine environmental awareness, they will have the intention to support the environment and thereby lead to pro-environmental behaviors in many different ways.

The research results bring about some theoretical contributions as below.Firstly,marine environmental awareness has a direct impact onthe behavioral intention of students towards the ocean environment. This positive correlation with $R^2 = 77,8\%$ bringing the same opinion with previous studies by Gkargkavouzi et al. (2020); Hofman et al. (2020); Hu et al. (2010); Liu et al. (2020); Liu et al. (2021); Pan et al. (2018); Yoon et al. (2021). When students are aware of the challenges facing marine ecosystems, they develop a sense of responsibility and concern. This

awareness fosters emotional connections and understanding of the consequences, motivating individuals to form their behavior intentiontowards supporting sustainable practices. Additionally, awareness enhances personal efficacy and promotes collective action, leading to a greater commitment to marine conservation.Secondly, behavioral intention brings a significant impact on pro-environmental behavior, which is exactly as proposed by the TRA and TPB theories.Moreover, this finding also supports the research of Arı & Yılmaz (2017); Wang & Mangmeechai (2021);Yang et al. (2020). Behavioral intention drives marine pro-environmental behavior of students by providing motivation and guiding decision-making. When students have a strong intention to protect marine environments, they are more likely to prioritize sustainable choices and overcome barriers. Consistency in aligning behavior with intention leads to the formation of habits that support long-term marine conservation efforts. Thirdly, besides the direct impact of marine environmentalawareness on pro-environmental behaviormentioned byLiu et al. (2020); Soares et al. (2021); Umuhire & Fang (2016); Yang et al. (2020), our findings indicate an important contribution that behavioral intention plays as a mediating variable in the relationship of marine environmental awareness and pro-environmental behavior. In other words, the awareness of the marine environment indirectly affects marine pro-environmental behavior through behavioral intention. Awareness can increase students' knowledge and concern, leading them to develop a strong intention to protect marine ecosystems. This intention serves as a motivational force, driving individuals to prioritize pro-environmental actions. Ultimately, the strengthened behavioral intention translates into tangible behaviors that contribute to the conservation and preservation of marine environments.

5. Conclusion and Implications

With the important geographical economic and political characteristics, Vietnam with a coastline of more than 3,260km needs to come up with suitable policies to maintain and preserve the marine economy in a strict manner.Drawing on the TRA and TPB theories, the objective of our study is to investigate the relationship between marine environmental awareness, intention and pro-environmental behavior among university students in Vietnam. Through a survey of 450 university students in all three regions of Vietnam, including students whoused to live in coastal and mainland areas, the research results showed thatstudents' marine environmental awareness has a direct impact on their behavioral intentions, then lead to pro-environmental behaviors. In other words, marine environmental awareness directly affects pro-environmental behavior and also has an indirect effect onpro-environmental behavior through behavioral intention of university students in Vietnam. This relationship is proven to be statistically significant and the level of model explanation is above 70%.

To raise awareness about the marine environment and promote pro-marine environment intentions and behaviors among students in Vietnam, some management implications can be put

forward. For higher education administrators, in the context of sustainable development becoming increasingly more and more important, lectures need to include more examples and information about the marine environment, the issues and challenges that it is facing. From there, it provides knowledge about the importance of protecting and preserving the marine environment, as well as the impacts of human behavior. In addition, it is possible to organize more volunteer activities, practical programs and organize discussions with marine environment experts. This gives students direct access to the marine environment, witnessing conservation issues and opportunities, thereby increasing their awareness and consciousness. For student scientific research activities, universities can orient and promote topics about the environment in general and the marine environment in particular. At the same time, provide scholarships and awards related to students' practical activities and research products that can be applied to marine environmental protection activities. This further increases students' awareness and encourages them to participate and contribute to activities supporting the marine environment.For students, the prerequisite to raising their awareness of marine environmental issues is to regularly disseminate information, participate in courses or discussions about the marine environment to further enhance their knowledge, or organize exhibitions and student day with the topic related to the environment protection, thereby spreading community awareness about the marine environment also. In addition, students need to actively take the simplest personal actions from within their school, from the residential area where they live to protect the environment and land landscape. Then when moving to coastal areas, students will actively take actions to support the marine environment. For example, they can limit the use of plastic bags and single-use plastic products, save energy and water, and participate in volunteer activities such as beach cleanupsand participate in propaganda to visitors in coastal tourist areas.

Acknowledgements

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