

Concept Paper

The Determinant Factors of Travelers' Choices for Pro-Environment Behavioral Intention-Integration Theory of Planned Behavior, Unified Theory of Acceptance, and Use of Technology 2 and Sustainability Values

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Received: 8 May 2018; Accepted: 31 May 2018; Published: 4 June 2018



Abstract: From a previous literature review, there are rare studies that focus on integrating Sustainability Values (SVs), the Theory of Planned Behavior (TPB), and Unified Theory of Acceptance and Use of Technology (UTAUT2) to predict potential travelers' behavioral intentions. In light of this, the research is designed to propose a comprehensive understanding of potential travelers' choices for sustainable hospitality businesses by integrating SV, TPB, and UTAUT2 into a theoretical framework, by moderating the effect of age. Prior studies have mentioned TPB identified the role of attitude, perceived behavior control, and moral obligation in generating intention. However, the use of TPB and the extended UTAUT model to explain pro-environmental behavior is lacking. Data was collected from 34 northern, 2 central, and 6 southern Taiwanese consolidated headquarter travel agencies. Email questionnaires were distributed to 630 individuals in 42 travel agencies. The proposed model will be also examining, with an AMOS procedure of structural equation modeling (SEM), the maximum likelihood method of estimation. The results indicated that (1) SVs are positively and significantly impacted by pro-environmental behavioral intention; (2) SVs are positively and significantly impacted by attitude, social influence, perceived behavioral control, and habit respectively; (3) attitude, perceived behavioral control, and habit is positively mediated by the effect between SVs and pro-environmental behavioral intention, respectively; (4) the social demographic variable of age is positively moderated the effect between SVs and social influence.

Keywords: sustainability values; theory of planned behavior; unified theory of acceptance and use of technology 2; pro-environment behavioral intention

1. Introduction

Increasingly, individuals have come to recognize that environmental issues exist and that a practical awareness of limited and fragile natural resources is much more necessary than ever before [1,2]. Humankind is facing a growing number of global environmental challenges, which include global warming, water shortages and drought, noise pollution, light pollution, air pollution, along with habitat and biodiversity loss. In general, most people focus on their own personal activities and experience with travel itineraries and give less concern to the environmental resources involved. Sustainable tourism is defined as “tourism which meets the needs of present tourists and host regions while protecting and enhancing the opportunity for the future”. Sustainable tourism pursues

minimal negative impacts on the local environment and culture while enhancing benefits for local inhabitants [3]. In previous studies, most hospitality industries have been concerned with revenue or profit performance [4–6]. Traditionally, hospitality businesses consume excessive amounts of energy and of limited nonrenewable natural resources in order to offer services to travelers. It has been recognized that serious problems are caused by an overabundance of travel products and services. Production processes are seen to be unfriendly to the natural environment and cause local resource disasters [7]. As such, travel-industry researchers and practitioners have begun to turn their attentions to other psychosocial constructs such as attitudes, beliefs, and values to meet their various responsibilities and customer expectations. These metrics have turned out to be more compatible in predicting pro-environmental behaviors [8–10].

Recently researchers have based predictive reasoning on such notions, and they have changed their directions to other psychosocial traits such as attitudes, social influence, and habits. Consideration of these variables has had unexpectedly successful results towards predicting pro-environmental behaviors [8,10,11]. The encouragement of greater pro-environmental engagement in order to meet environmental responsibility means that sociologists and psychologists must determine various psychosocial approaches to clarify environmental behavior [11]. It has also been pinpointed that socially structured variables define only the modest extent of variance in measures of environmental behavior [12]. The theory of planned behavior has been used to focus on the importance of intention while conducting a certain behavior. Pro-environmental behaviors are rooted from an acceptance of certain individual values. Pro-environmental behavior describes human behaviors that intentionally protect the global environment. Pro-environmental behavior is a certain type of prosocial behavior that is directed toward, and conducted with, the intention of building up the benefits of an individual, group, organization, or world [13].

Unifying the considerable number of models and diverse theories into a comprehensive model to be used as a workable framework could be useful for pinpointing potentially significant variables across pro-environmental behaviors and intentions [14]. This study hopes to fill a gap in the literature by determining and empirically examining a critically extended model by measuring four variables that mediate the relationship between SV and behavioral intention. In addition, the present study will expand the literature by testing the identifiably significant moderating impact of age on individual behavior. The present investigation aims to improve an understanding of the psychosocial variables which determine pro-environmental economic behavior [11]. Some studies have mentioned the relationship that exists between green or pro-environment behavior with theory of planned behavior [15,16]. This study is comprised of TPB and UTAUT2 (see Figure 1) explicit constructs to determine a workable research model in an attempt to avert the shortage of one single theory rooted on either self-interest or psychosocial effects.

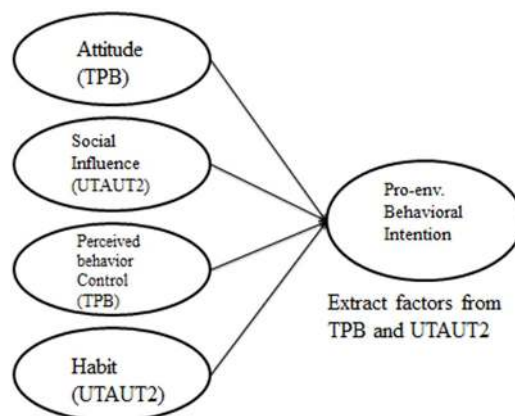


Figure 1. Comprising Theory of Planned Behavior (TPB) and Unified Theory of Acceptance and Use of Technology (UTAUT2).

This study makes further examination by describing the moderating effects of age between sustainability values (SV) and an extended model toward behavioral intention. Furthermore, this study integrates Theory of Planned Behavior (TPB), and a Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) into an extended model. Therefore, it is essential for individuals to adopt and then to practice environmentally alternative, relevant behaviors committed to reducing environmental impacts.

2. Literature Review and Hypotheses Development

2.1. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) (see Figure 1) was developed by Ajzen (1985), and it is an expanded version of the theory of reasoned action (TRA) [17–20].

TPB describes how individual behavior is motivated from self-interest intention [21]. An integration of these TPB concepts into a comprehensive framework can provide better liability for one's personal, sustainable traveling behavioral intention [15,18,22]. The TPB has been successfully and productively put into practice in prognosticating the heterogeneity of individual behaviors, not only in the tourism and hospitality business [10,18,23,24] but also in health care related practices [25], pro-environmentalism [13,18,23,24], wastepaper recycling [26], water conservation [27], green consumerism [28], international travel [29], destination choice [30], pro-environmental behaviors within a hotel context [18,31], and storm water management [32].

2.2. Unified Theory of Acceptance and Use of Technology2 (UTAUT2)

The Unified Theory of Acceptance and Use of Technology (UTAUT) are useful to determine behavioral intention or conduct behavior towards the acceptance of facility. The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) is comprised of three new constructs (i.e., hedonic motivation, price value, and habit) which are entered into the existing UTAUT model [33]. To summarize, the UTAUT2 model reflects how personal intention of usage determines certain facility by means of seven variables: (1) Performance expectancy; (2) effort expectancy; (3) facilitating conditions; (4) social influence; (5) hedonic motivation; (6) price value; and (7) habit [34,35]. The utilization of UTAUT2 is not only a new path, but it is also one that accomplishes the presence of the element promoting situations—determined as the personal concept of the improving opportunity for using facility [36]. Venkatesh's Unified Theory of Acceptance and Use of Technology in a consumer context (UTAUT2) comprised a new construct in terms of self-perception (SP), and identifying certain other new moderators.

2.3. Comprising Theory of Planned Behavior and Unified Theory of Acceptance and Use of Technology2

An increasing awareness into the destructive influence on the environment of human lifestyles implemented in today's societies expands the core of practiced environmental psychology to reconsider pro-environment behavior. This study introduces a social-cognitive theory that can be adapted to explain pro-environmental behavior. The theory of planned behavior was initially created as an expansion of Ajzen and Fishbein's theory of reasoned action (TRA), which is intended to predict behaviors from attitudes as well as to illustrate the process through which the two are correlative [13,37]. The theory of planned behavior has been used to focus on the importance of intention while conducting a certain behavior. This study is comprised of TPB and UTAUT2 (see Figure 1) explicit constructs to determine a workable research model in an attempt to avert the shortage of one single theory rooted on either self-interest or psychosocial effects. The precise constructs combine the variables of attitude and perceived behavioral control extracted from TPB, and the variables social influence and habit extracted from UTAUT2.

2.4. Pro-Environmental Behavior

Pro-environmental behavior describes human behaviors that preserve the global environment, such as environmentally involvement behaviors, environmentally relevant behaviors, environmentally responsible behaviors, and pro-environmental behaviors [13]. Pro-environmental behavior is perceptive conduct executed by human beings in order to mitigate the damaging impact of human activities on the natural environment [13]. Ramus, and Killmer [38] interpret that pro-environmental behavior is a certain type of pro-social behavior, such as a behavior that is implemented with the intention of boosting the benefits of an individual, organization, or of a society. Caprara and Steca [39] proclaimed that people tend to conduct behaviors of contributing to, serving, or taking care of others.

Pro-environmental behaviors root from recognition of certain individual values. This argument conforms to Ajzen's theory that convictions predict behavioral intentions, which will consecutively cause actual behavior to occur, and manifest a causal process in which environmental beliefs are evinced.

2.5. Sustainability Value

The United Nations General Assembly identified the relevance of people's sustainability values to inspire behaviors leading towards the sustainability of globalization by asserting a set of "certain fundamental values essential to international relations in the twenty-first century" [40,41]. The explicit values indicating this U.N. allegation are identified as freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility [41,42]. Pro-environmental behaviors are rooted from a recognition of certain individual values. Pro-environmental behavior describes human behaviors that intentionally protect the global environment. Pro-environmental behavior is a certain type of pro-social behavior that is directed toward and conducted with the intention of building up the benefits of an individual, group, organization, or world [13].

Some studies have concluded that sustainability values play an important role in certain situations whenever they are stimulated by a set of compassionate combinations, and these comprised values have a positive relationship when coupled with pro-environmental behavior [43–45]. Therefore, this study proposed the following hypothesis.

Hypothesis 1 (H1). *Sustainability values used to predict potential travelers' values will positively affect pro-environmental behavioral intention.*

2.6. Impact of Attitude, Social Influence, Perceived Behavioral Control, and Habit on Intention

Previous studies resulting in empirical findings support the positive effect on attitude, social influence, perceived behavioral control, and habit indicating the significant variables within TPB and UTAUT2 to illustrate the personal behavioral intention process [46–49]. Chan and Bishop [48] established that personal attitude, social influence, perceived behavioral control, and habit greatly and directly impact one's behavioral intention. Han [15] also pinpointed that personal attitude, social influence, perceived behavioral control, and habit in travelers' decision-making progress determined that travelers' supportive appraisal toward choosing and staying in a green hotel was real. Previous empirical studies have discovered that individuals with plentiful pro-environmental knowledge or who possess sustainability values related to engaging in green hotel transactions will establish a strong behavioral intention to stopover at such hotels if they are confident or capable and have opportunities to do so [15,16]. In sum, the following hypotheses were developed:

Hypothesis 2 (H2). *Attitude positively affects the choice of potential travelers' pro-environmental behavioral intention.*

Hypothesis 3 (H3). *Social influence positively affects the choice of potential travelers' pro-environmental behavioral intention.*

Hypothesis 4 (H4). *Perceived behavioral control positively affects the choice of potential travelers' pro-environmental behavioral intention.*

Hypothesis 5 (H5). *Habit positively affects the choice of potential travelers' pro-environmental behavioral intention.*

2.7. Relationship among Attitude, Social Influence, Perceived Behavioral Control, Habit, and Sustainability Values (SV)

This global biosphere is placed on the recognition of prevailing values that humans imperil the balance of the natural environment when natural resources are scarce, and that human beings are not willing to damage the natural environment [14]. A number of studies have revealed that travelers' attitudes, social influence, perceived behavioral control, and habit are strongly associated with sustainability values (SV). Some analyses have exhibited that individuals will perform pro-environmental behaviors if he/she feels that a significant level of social pressure increases and his/her sense of obligation coincides with a greater awareness of environmental depletion [21]. Chen and Tung [50] discovered that recognition of environmental depletion, which is viewed as personally developing attitudes, perceived attitudes, social influence, behavioral control, habit, pro-environmental behavioral intention, subjective norms, and production of behavioral intention conducive to staying in green hotels. Travelers who are conscious of the severe environmental depletion are more liable to have positive attitudes favoring pro-environmental behavioral intention, recognize social influence to contribute in pro-environmental expenditures, and perceive the confidence and ease of purchasing a pro-environmental product or service than those who have less involvement with environmental matters [15,51]. SV is a certain type of pro-social value conducted with the aim of building up the benefits of an individual, group, organization, or world [13]. Travelers' attitudes, social influence, perceived behavioral control, habit, and SV certainly perform pro-environmental behavior in interpreting an individuals' pro-environmental liable decision making procedure [14]. Venkatesh, Thong, and Xu [33] comprised the perspective that individual learning of pro-environmental knowledge will influence behavior. When placed in the context of choices of potential travelers' pro-environmental behavioral intention, this research built the following hypotheses:

Hypothesis 6 (H6). *SV positively affects travelers' attitude.*

Hypothesis 7 (H7). *SV positively affects travelers' social influence.*

Hypothesis 8 (H8). *SV positively affects travelers' perceived behavioral control.*

Hypothesis 9 (H9). *SV positively affects travelers' habit.*

Hypothesis 10 (H10). *SV positively affects pro-environmental behavioral intention mediated by travelers' attitude.*

Hypothesis 11 (H11). *SV positively affects pro-environmental behavioral intention mediated by travelers' social influence.*

Hypothesis 12 (H12). *SV positively affects pro-environmental behavioral intention mediated by travelers' perceived behavioral control.*

Hypothesis 13 (H13). *SV positively affects pro-environmental behavioral intention mediated by travelers' habit.*

2.8. The Moderating Effects of Age

There are limited prior studies which have considered the relationship between socio-demographic variables and SV. As a matter of fact, this study tested how the age variable moderates the effect between SV and the extended model toward pro-environmental behavioral intention [52–54].

This study expects the moderating effect of age to strengthen the relationship conditions on behavioral intention. This is due, in large part, to travelers having developed their own SV knowledge within different age groups of individuals who have acquired enough knowledge or value awareness about pro-environment behavior; as such, this will be more consequential. As the causal sequence occurs, they need a time lag to apply their consequence [13]. Thus, this research hypothesizes the following:

Hypothesis 14a (H14a). *Age will moderate the relationship between SV and attitude toward the choice of potential travelers’ pro-environmental behavioral intention.*

Hypothesis 14b (H14b). *Age will moderate the relationship between SV and social influence toward the choice of potential travelers’ pro-environmental behavioral intention.*

Hypothesis 14c (H14c). *Age will moderate the relationship between SV and perceived behavior control toward the choice of potential travelers’ pro-environmental behavioral intention.*

Hypothesis 14d (H14d). *Age will moderate the relationship between SV and habit toward the choice of potential travelers’ pro-environmental behavioral intention.*

3. Research Design and Methodology

3.1. Research Framework and Hypotheses

The Sustainability Values represent antecedent variables as well as independent variables within the framework (Figure 2) of this study. Freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility are the items used to measure latent SV variables in this study.

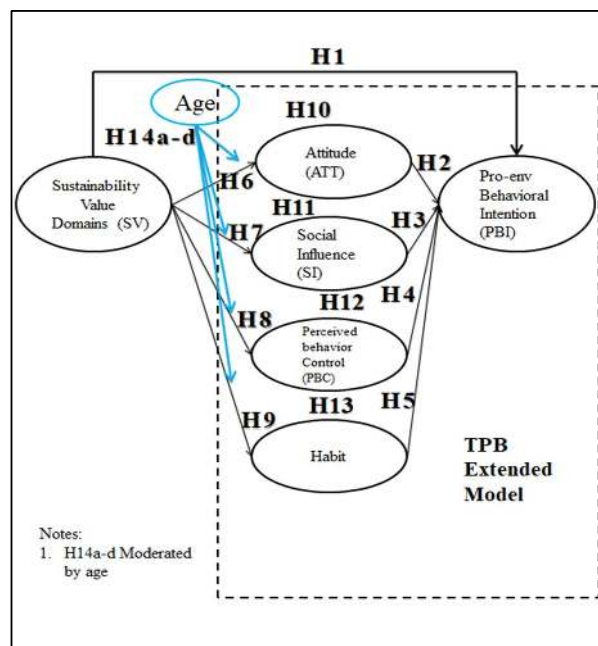


Figure 2. Research framework.

TPB is motivated from self-interest intention [21]. UTAUT2 reflects the presence of the element promoting situations—determined as the personal concept for improving opportunities for using a facility [36]. In this study, it comprises TPB and UTAUT2 explicit constructs to determine the research model in an attempt to evade the shortage of one single theory rooted on either self-interest or psychosocial. The precise constructs include attitude, and perceived behavioral control from TPB, and social influence, and habit taken from UTAUT2. Those essential constructs of attitude, perceived behavioral control social influence, and habit are considered as choices of potential travelers' pro-environmental behavioral intention. As a result, this study extracts constructs from TPB and UTAUT2 and develops a comprehensive action-determination model referred to as an extended model which will be used as a dependent also called an endogenous variable. This study tested socio-demographic variables which moderate the effect between SV and the extended model toward pro-environmental behavioral intention [52–55].

3.2. Sample and Procedures

The research data used as part of this study was collected from December 2016 to June 2017 from travel agencies located in Taiwan. This study conducted stratified sampling research strategy to sample local travel agencies. There are 139 consolidated headquarter travel agencies in Taiwan [56]. The travel destinations of travel agencies had been classified as touring in the American Continent, European Continent, African Continent, Asian Continent, and Oceania. Data was collected from 34 northern, 2 central, and 6 southern Taiwanese travel agencies. This study selected one third of the 113, 6, and 20 consolidated headquarter travel agencies respectively from each region of Taiwan. This research also conducted purposive sampling to select the participants that were involved. Each travel agency selected 15 travelers going abroad to complete a questionnaire. The questionnaires were distributed to prospective travelers who participated in or joined either a group tour or partook of self-travel experiences. Therefore, the study included 630 travelers participating from 42 travel agencies in Taiwan. All travelers were asked to respond to the questions pertaining to questions of freedom, equality, solidarity, tolerance, respect for nature, shared responsibility, attitudes, social influences, perceived behavior control, habits, behavioral intention, and demographic characteristics.

The questionnaires were filled out with anonymity and confidentiality. The questionnaires were distributed and collected once within a two-week period. This research constructed Chinese versions for the questionnaires. The translation and back-translation procedure was suggested by Brislin [57]. During the translation procedure, the wording of some items was altered to achieve an authentic meaning in Chinese, so as to be closer to its initial meaning in English. Participants answered using a seven-point Likert scale ranging from “1 = strongly disagree” to “7 = strongly agree”. The scale is shown in the Appendix A. All the variables were analyzed with a pilot-test to ensure that all of the stated items had reliability exceeding a value of 0.7. Items with lower reliability were eliminated.

3.3. Measurements

Measuring the sustainability values of a valid scale was developed by Shepherd [41]. Comprising TPB and UTAUT2 measurements which were amended by Han [15]. To assure translation quality and warrant conformity of authentic meanings, the entire questionnaire was translated and constructed according to three aspects [58]. First, the survey was administered in Taiwan, and the initial items were translated from English to Chinese. Validity and reliability were retained through a precise process. The original version of the questionnaires was pretested and reviewed by both academic and industry experts to verify the content effectiveness of the instruments and to ensure consistency in semantic meaning between English and Chinese. Second, three industrial supervisors and three academic experts in the field of tourism reviewed the instruments, scales, and questions of the measurements to enhance accuracy and authenticity. Third, 30 travelers were selected to pretest the questionnaire. Interviews involving those travelers and the supervisors of the travel agents were also conducted.

The questionnaires were distributed to respondents by means of e-mail. A relevant cover letter and the questionnaire itself explicated the purpose of the survey to the respondents.

4. Analysis and Results

This study was constructed to examine whether there is a significant relationship among sustainability value, attitude, social influence, perceived behavior control, habit, and pro-environmental behavior intention. This paragraph represents the descriptive statistics as seen in Table 1 for the travelers touring on the American Continent, European Continent, African Continent, Asian Continent, and throughout Oceania. Data was collected from 34 northern, 2 central, and 6 southern Taiwanese consolidated travel agency headquarters. Email questionnaires were distributed to 630 individuals at 42 separate travel agency offices. Respondents were asked to return a completed survey by means of email. In total, 416 individuals at 42 travel agencies completed and then returned the questionnaires, which made the response rate 63.9%. Among them, 20 of the questionnaires were eliminated because of missing data response points.

Table 1. The means and standardized deviations.

Variables	Means	S.D.
Age	2.66	0.898
Gender	1.39	0.488
Marriage Status	1.48	0.500
Freedom (Fd)	4.46	1.372
Equality (Eq)	4.39	1.313
Solidarity (Sd)	4.39	1.414
Tolerance (Tl)	4.54	1.362
Respect for Nature (Rp)	4.43	1.191
Shared Responsibility (Sh)	4.38	1.438
Attitude (At)	4.39	1.167
Social Influence (Si)	4.14	1.295
Perceived Behavioral Control (Pbc)	4.29	1.272
Habit (Hb)	4.56	1.105
Behavioral Intention (Bi)	4.46	1.356

4.1. Validity, Reliability, and Model Fit

Discriminant validity ensures that no significant variance exists among different variables that could have been achieved for the same reason. Discriminant validity differentiates between one construct and another within the given model. Table 2 examines the Average Variance Extracted (AVE) for each of the constructs and then it compares this with the squared correlations among the constructs which reveals that the shared variance among any two constructs (i.e., the square of their inter-correlation) was always less than the average variance explained by the construct, suggesting discriminant validity exists. It represents the correlations between the variables, revealing that the traits possess acceptable discriminant validity. Fornell and Larcker [59] asserted that the variance extracted estimates should exceed the squared correlation estimated.

The research model was assessed using the two-step approach recommended by Anderson & Gerbing [60].

First, the indicators were tested using Comprehensive Confirmatory Variable Analysis (CFA). The indicators were constrained in order to load on their respective variables, and they were not allowed to cross-load onto other variables. All of the indicators were included in the subsequent analysis. According to Hair et al. [61], an acceptable variable loading value will exceed 0.5, and when it equals or is above 0.7, it is considered to be good for one indicator.

Table 2. Correlations among constructs.

	Gender ^a	Age	Marriage ^b	Fd	Eq	Sd	TI	Rp	Sh	At	Si	Pbc	Hb	BI
Gender ^a														
Age	0.083													
Marriage ^b	−0.095	0.149 **												
Fd	0.069	0.005	0.055	(0.671)										
Eq	0.015	0.010	0.122 *	0.478 **	(0.845)									
Sd	0.039	−0.045	0.102 *	0.347 **	0.400 **	(0.864)								
TI	0.037	−0.014	−0.059	0.309 **	0.320 **	0.296 **	(0.862)							
Rp	0.031	−0.070	0.001	0.450 **	0.572 **	0.424 **	0.371 **	(0.814)						
Sh	0.077	−0.050	0.040	0.289 **	0.471 **	0.337 **	0.324 **	0.487 **	(0.855)					
At	0.002	−0.030	0.068	0.428 **	0.390 **	0.363 **	0.435 **	0.415 **	0.260 **	(0.841)				
Si	0.083	0.015	0.126 *	0.275 **	0.298 **	0.306 **	0.248 **	0.314 **	0.283 **	0.567 **	(0.844)			
Pbc	0.074	0.048	0.099	0.362 **	0.388 **	0.349 **	0.203 **	0.294 **	0.174 **	0.362 **	0.395 **	(0.837)		
Hb	0.060	−0.007	−0.022	0.412 **	0.374 **	0.341 **	0.374 **	0.400 **	0.219 **	0.483 **	0.350 **	0.616 **	(0.884)	
Bi	0.058	0.009	0.057	0.985 **	0.494 **	0.352 **	0.311 **	0.458 **	0.307 **	0.432 **	0.284 **	0.369 **	0.408 **	(0.849)

Note: (1) N = 326; * $p < 0.05$; ** $p < 0.01$; (2) The square root of AVE for discriminant validity appear in parentheses along the diagonal; (3) Fd: Freedom; Eq: Equality; Sd: Solidarity; TI: Tolerance; Rp: Respect for Nature; Sh: Shared Responsibility; At: Attitude; Si: Social Influence; Pbc: Perceived Behavioral Control; Hb: Habit; Bi: Behavioral Intention; Gender^a: 1 = Male, 2 = Female; Marriage^b: 1 = Single, 2 = Marriage.

In this study, we applied a convergent validity method to test the construct validity. The convergent validity method was tested by applying variable loading, composite reliability, and AVE [59]. According to Hair et al. [61], the acceptable critical ratio should be above 1.96 (t value). The AVE measures the level of variance captured by a construct vs. the level caused through measurement error. Any AVE value exceeding 0.5 is considered to be acceptable; whereas, a value of 0.7 or above is considered to be excellent [61].

The descriptive statistics for the constructs of freedom, equality, solidarity, tolerance, respect for nature and shared responsibility are reported in Table 2, along with the results of the measurement model testing. Reliability was assessed via the coefficient estimates that are also reported in Table 2.

4.2. Sustainability Values (SV)

The assumptions of CFA were satisfied by means of the testing; therefore, we proceeded with continued analyses. The goodness-of-fit indices for the correlated six variables of the SV scale are shown in Table 3. The value of the GFI, TLI, and CFI satisfied the criterion value of 0.9 or above, and the value of RMR was smaller than 0.08. The results indicate that the six endogenous variables are useful to measure the core construct of the sustainability values (see Table 4). Convergent validity was confirmed by means of the AVE value (>0.5) and the CR value (>0.7).

Table 3. Coefficient of the six-variable model of sustainability values.

Sample	χ^2	df	p	AGFI	RMR	GFI	TLI	CFI
Model	12.469	9	0.188	0.977	0.045	0.99	0.99	0.994

Table 4. Validity and reliability for measuring the model of sustainability values.

Dimension	Items	Factor Loading	AVE	CR	Cronbach's α
Freedom	Fd01	0.731	0.671	0.910	0.907
	Fd02	0.860			
	Fd03	0.851			
Equality	Eq01	0.923	0.845	0.942	0.945
	Eq02	0.911			
	Eq03	0.924			
Solidarity	Sd01	0.931	0.864	0.950	0.939
	Sd02	0.927			
	Sd03	0.931			
Tolerance	Tl01	0.933	0.862	0.949	0.935
	Tl02	0.928			
	Tl03	0.924			
Respect for Nature	Rp01	0.910	0.814	0.929	0.911
	Rp02	0.898			
	Rp03	0.900			
Shared Responsibility	Sh01	0.928	0.855	0.947	0.931
	Sh02	0.929			
	Sh03	0.918			

4.3. Attitude

The analysis result of CFA was satisfied with the testing; therefore, we proceeded with the analyses. It showed the goodness-of-fit indices for the correlated six variables of the attitude scale in Table 5. The value of the GFI, TLI, and CFI satisfied the criterion value of 0.9 or above, and the value of RMR was smaller than 0.08. The results showed that three indicators measured the core construct of

attitude (see Table 6). Convergent validity was confirmed by both the AVE value (>0.5) and the CR value (>0.7).

Table 5. Coefficient of the measuring the model of attitude.

Sample	χ^2	<i>df</i>	<i>p</i>	AGFI	RMR	GFI	TLI	CFI
Model	2.01	2	0.372	0.988	0.011	0.998	0.99	0.99

Table 6. Validity and reliability for the measuring model of attitude.

Dimension	Items	Factor Loading	AVE	CR	Cronbach's α
Attitude	At01	0.911	0.841	0.941	0.906
	At02	0.924			
	At03	0.917			

4.4. Social Influence

The analysis of the measurement model revealed a good fit to the data. Although the chi-square estimate was significant, this statistic is known to be sensitive to sample size [62]. As a result, emphasis is placed on the Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI). It shows the goodness-of-fit indices for the correlated six variables of the attitude scale in Table 7. The value of the GFI, TLI, and CFI satisfied the criterion value of 0.9 and above, and the value of RMR was smaller than 0.08. The results show that three indicators measure the core construct of the attitude (see Table 8). Convergent validity were confirmed by the AVE value (>0.5) and the CR value (>0.7).

Table 7. Coefficient of the measuring the model of social influence.

Sample	χ^2	<i>df</i>	<i>p</i>	AGFI	RMR	GFI	TLI	CFI
Model	5.793	8	0.67	0.987	0.012	0.995	0.996	0.99

Table 8. Validity and reliability for the measuring model of social influence.

Dimension	Items	Factor Loading	AVE	CR	Cronbach's α
Social Influence	Si01	0.92	0.844	0.942	0.907
	Si02	0.918			
	Si03	0.918			

4.5. Perceived Behavioral Control

The evidence in Table 9 indicates the measurement model revealed a good fit to the data. Although the chi-square estimate was significant, this statistic is known to be sensitive to sample size [62]. As a result, emphasis is placed on the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI). It shows the goodness-of-fit indices for the correlated six variables of the attitude scale in Table 9. The value of the GFI, TLI, and CFI satisfied the criterion value of 0.9 and above, and the value of RMR was smaller than 0.08. The results show that three indicators measure the core construct of the attitude (see Table 10). Convergent validity were confirmed by the AVE value (>0.5) and the CR value (>0.7).

Table 9. Coefficient of the measuring model of perceived behavioral control.

Sample	χ^2	<i>df</i>	<i>p</i>	AGFI	RMR	GFI	TLI	CFI
Model	11.837	8	0.159	0.974	0.0127	0.99	0.996	0.998

Table 10. Validity and reliability for the measuring model of perceived behavioral control.

Dimension	Items	Factor Loading	AVE	CR	Cronbach's α
Perceived	Pbc01	0.912			
Behavioral	Pbc02	0.915	0.837	0.939	0.903
Control	Pbc03	0.918			

4.6. Habit

The goodness-of-fit indices for the measurement model of perceived behavioral control revealed a good fit to the data. Although the chi-square estimate was significant, this statistic is known to be sensitive to sample size [62]. As a result, emphasis is placed on the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI). It shows the goodness-of-fit indices for the correlated six variables of the attitude scale in Table 11. The value of the GFI, TLI, and CFI satisfied the criterion value of 0.9 and above, and the value of RMR was smaller than 0.08. The results show that three indicators measure the core construct of the attitude (see Table 12). Convergent validity were confirmed by the AVE value (>0.5) and the CR value (>0.7).

Table 11. Coefficient of the measuring model of habit.

Sample	χ^2	<i>df</i>	<i>p</i>	AGFI	RMR	GFI	TLI	CFI
Model	29.209	8	0.000	0.939	0.080	0.977	0.97	0.984

Table 12. Validity and reliability for the measuring model of habit.

Dimension	Items	Factor Loading	AVE	CR	Cronbach's α
Habit	Hb01	0.932			
	Hb02	0.948	0.849	0.958	0.941
	Hb03	0.910			

Based on the conceptual support in the literature, sustainability values are known to be associated with pro-environmental behavioral intention. The explicit values indicate freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility [41,42]. Pro-environmental behaviors root from an acceptance of certain individual values. The first research hypothesis defines direct links between sustainability values and pro-environmental behavioral intention. This path was deemed positive and significant ($p \leq 0.001$), thereby supporting Hypothesis 1.

The testing of the hypothesized model (see Figure 3) was accomplished through structural equation modeling via the use of Amos. Table 3 presents the detailed results of the comprehensive model testing. Similar to the measurement model, the structural model also fit the data well with the CFI, TLI, and RMR estimates being either well above or approaching the recommended cutoff values (CFI = 0.994, TLI = 0.99, and RMR = 0.045). The relative ability of the hypothesized model was able to explain a variation in the six variables measured by the R^2 value for the respective equations (Table 13). As expected, the hypothesized path between sustainability values and pro-environmental behavioral intention was both positive and significant, thus supporting the relationships specified in the pro-environmental behavior literature [13].

Table 13. Results of comprehensive model testing.

Path	Coefficient (<i>p</i> Value)	R^2
(SV \rightarrow PBI)	0.628 *** (≤ 0.001)	0.399

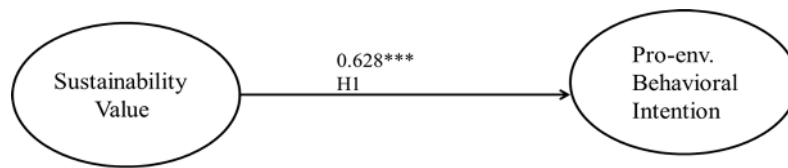


Figure 3. Model of sustainability value and pro-environmental behavioral intention. (* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$).

According to the conceptual support in the literature, pro-social cognitive is associated with pro-environmental behavioral intention. The extracting TPB values indicate attitude, and perceived behavioral control then UTAUT2 of social influence and habit. Previous studies with empirical findings support the positive effect on attitude, social influence, perceived behavioral control, and habit indicating the significant variables within TPB and UTAUT2 in illustrating the personal behavioral intention process [15,18,47–49]. Chan and Bishop [48] established that personal attitude, social influence, perceived behavioral control, and habit greatly and directly affect one's behavioral intention. Hypotheses 2–5 define direct links between pro-social cognitive and pro-environmental behavioral intention. This path was deemed both positive and significant ($p \leq 0.05$) except for the construct of social influence, thereby supporting Hypothesis 2, 4, and 5.

Testing of the hypothesized model (see Figure 4) was accomplished through structural equation modeling via the use of Amos. Table 5, Table 7, Table 9, Table 11, and Table 13 present the detailed results of the comprehensive model testing. Similar to the measurement model, the structural model also fit the data well with the CFI, TLI, and RMR estimates either well above or approaching the recommended values (CFI = 0.99; 0.998; 0.99; 0.984, TLI = 0.99; 0.996; 0.996; 0.97, RMR = 0.011; 0.0127; 0.012; 0.08). The relative ability of the hypothesized model explained variation in the six variables which were measured by the R^2 value for the respective equations (see Table 14). As expected, the hypothesized path between attitude and pro-environmental behavioral intention was positive and significant. The hypothesized path between social influence and pro-environmental behavioral intention is nonsignificant. The hypothesized path between perceived behavioral control and pro-environmental behavioral intention is significant. Finally, the hypothesized path between habit and pro-environmental behavioral intention is significant.

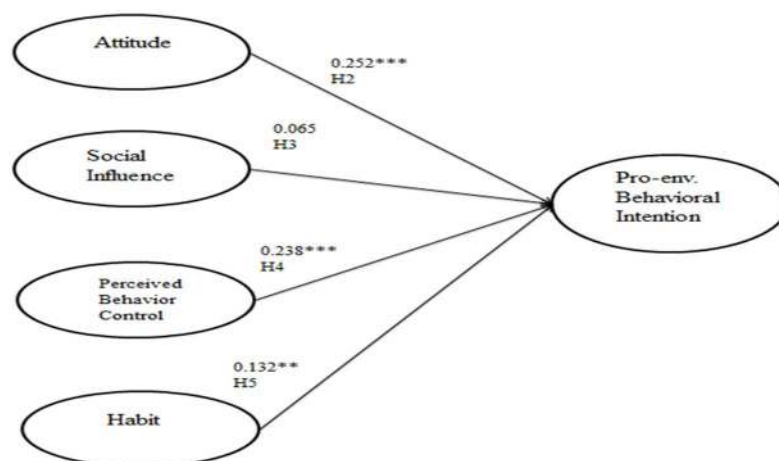


Figure 4. The model of sustainability value and pro-env. behavioral intention. (* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$).

Table 14. Results of comprehensive model testing.

Path	Coefficient (<i>p</i> Value)	R ²
(AT → PBI)	0.252 (≤0.001)	0.222
(SI → PBI)	0.065	0.149
(PBC → PBI)	0.238 (≤0.001)	0.145
(HB → PBI)	0.132 (≤0.01)	0.16

A number of studies reveal that travelers' attitude, social influence, perceived behavioral control, and habit are all strongly associated with sustainability values [15]. Such variables as attitude, social influence, perceived behavioral control, and habit that are fundamental components of socio-psychological theories that are often combined into theoretical studies that originate from pro-social intentions by virtue of their necessity in increasing predictive ability for one's pro-environmental behavioral intention [14,21,63,64]. Kim and Han [31] alleged that travelers who perceive environmental depletion problems are more liable to have beneficial attitudes toward green expenditure activity, feel social stress to become engage in green spending activity, and realize the ease of consumption of a green product rather than those who possess little involvement about environmental matters. Hypothesis 6–9 define direct links between sustainability values and social-psychological theories. This path was deemed both positive and significant ($p \leq 0.05$), thereby supporting Hypotheses 6–9.

The testing of the hypothesized model (see Figure 5) was accomplished through structural equation modeling via the use of Amos. The relative ability of the hypothesized model was able to explain variation in the four variables which were measured by the R² value for the respective equations (see Table 15). As expected, the hypothesized path between sustainability values and attitude is positive and significant. The hypothesized path between sustainability values and social influence is positive and significant. The hypothesized path between sustainability values and perceived behavior control is positive and significant. Finally, the hypothesized path between sustainability values and habit is positive and significant.

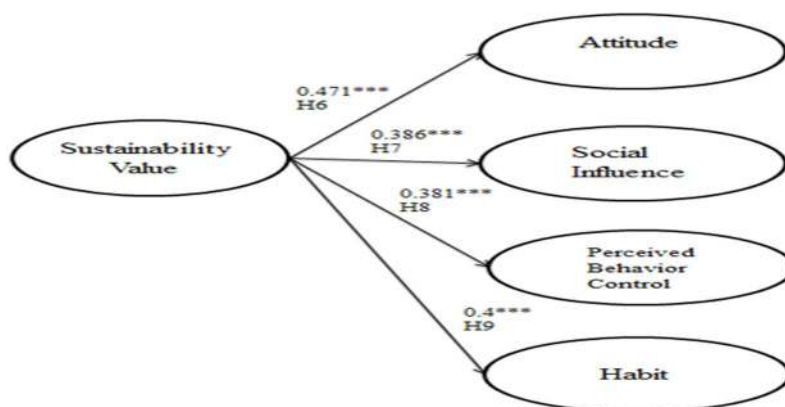


Figure 5. Model of sustainability value and pro-environmental behavioral intention. (* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$).

Table 15. Results of comprehensive model testing.

Path	Coefficient (<i>p</i> Value)	R ²
(SV → AT)	0.471 (≤0.001)	0.302
(SV → SI)	0.386 (≤0.001)	0.203
(SV → PBC)	0.381 (≤0.001)	0.21
(SV → HB)	0.4 (≤0.01)	0.24

4.7. The Mediation Effect Results

According to Chen and Tung [50], recognition of environmental problems is taken as an individual's common pro-social cognition towards preserving the environment. It plays an essential role in generating attitudes, social influence, perceived behavioral control, and habit toward a traveler's pro-environmental behavior, in the formation of an intention to stay at a green hotel. The serial mediation effects of sustainability values and attitude, social influence, perceived behavior control, and habit were examined using the Sobel test and Partial Least Squares (PLS) regression. According to Preacher and Hayes [65], the mediation effects generated by using the Sobel test formula are significant. The results from the mediation effect model are discussed in the following paragraph.

Hypotheses 10–13 propose that social psychological theory, attitude, social influence, perceived behavior control, and habit demonstrate that each construct mediates the relationship between sustainability values and pro-environmental behavioral intention (see Figure 6). The results of the Sobel test in Table 16 show that only social influence did not indirectly affect the relationship between sustainability values and pro-environmental behavioral intention ($\gamma = 0.065$, $z = 1.7$, $p > 0.05$). The other constructs of attitude, perceived behavioral control, and habit had indirectly affected the relationship between sustainability values and pro-environmental behavioral intention (see Table 16). Therefore, Hypothesis 11 was not supported. The remaining Hypotheses 10, 12, and 13, were supported.

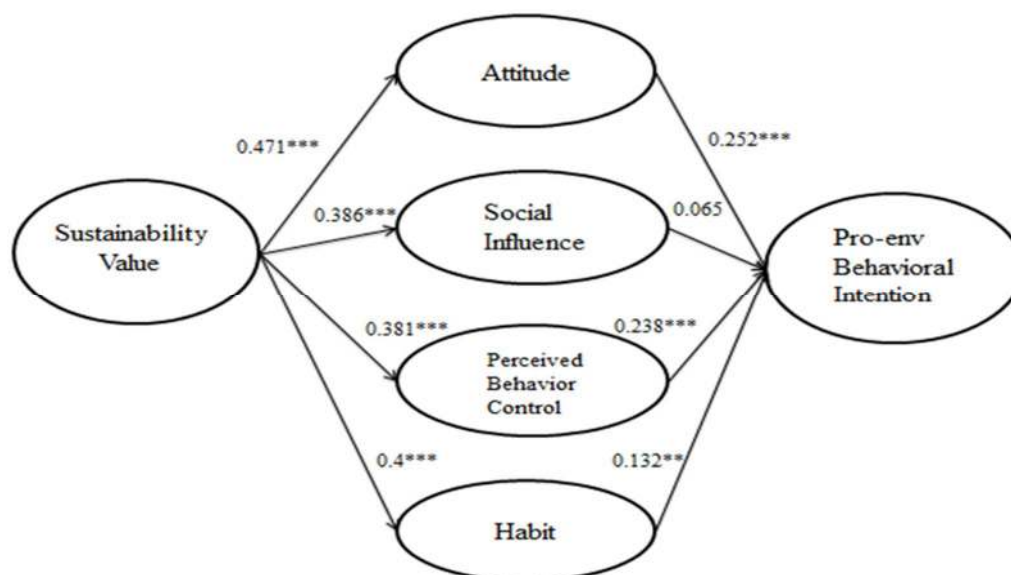


Figure 6. Model of social psychological theory and the effect of the sustainability value on pro-environmental behavioral intention. (* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$).

Table 16. Sobel test.

Mediation Variable	Sobel Z
H10: SV → AT → BI	4.60 ***
H11: SV → SI → BI	1.70
H12: SV → PBC → BI	4.70 ***
H13: SV → HB → BI	2.50 *

* $z > 1.96$; $\alpha = 0.05$; ** $z > 2.58$; $\alpha = 0.01$; *** $z > 3.89$; $\alpha = 0.001$.

4.8. The Moderation Effect Results

This study will test how the age socio-demographic variable moderates the effect between the SV and social psychological theory on pro-environmental behavioral intention [52–55]. The serial moderation effects of sustainability values and attitude, social influence, perceived behavior control,

and habit were examined using the Sobel test and PLS regression. According to Preacher and Hayes [65], the mediation effects of generating using the Sobel test formula are significant. The results from the moderation effect model are discussed in the following paragraph.

Hypotheses 14a–14d propose that the socio-demographic variable of age moderate the relationship of the effect between SV and social physiological theory (see Figure 7). The results of path coefficient in Table 17 indicate that only the construct of social influence had a moderated effect on the relationship between sustainability values and social physiological theory ($\gamma = 0.46$, $z = 2.69$, $p < 0.01$). The other constructs of attitude, perceived behavioral control, and habit did not moderate the effect of the relationship between sustainability values and social physiological theory (see Table 17). Therefore, only Hypothesis 14b was supported. The remaining Hypotheses 14a, 14c, and 14d were not supported.

Table 17. Path coefficient (Mean, STDEV, *t*-value).

	High		Low		<i>t</i> Value
	Sample Mean	Standard Error	Sample Mean	Standard Error	
SV → AT	0.52	0.06	0.41	0.07	1.19
SV → SI	0.46	0.06	0.29	0.02	2.69 **
SV → PBC	0.39	0.06	0.38	0.07	0.01
SV → HB	0.42	0.06	0.37	0.08	0.50

* $z > 1.96$; $\alpha = 0.05$; ** $z > 2.58$; $\alpha = 0.01$; *** $z > 3.89$; $\alpha = 0.001$.

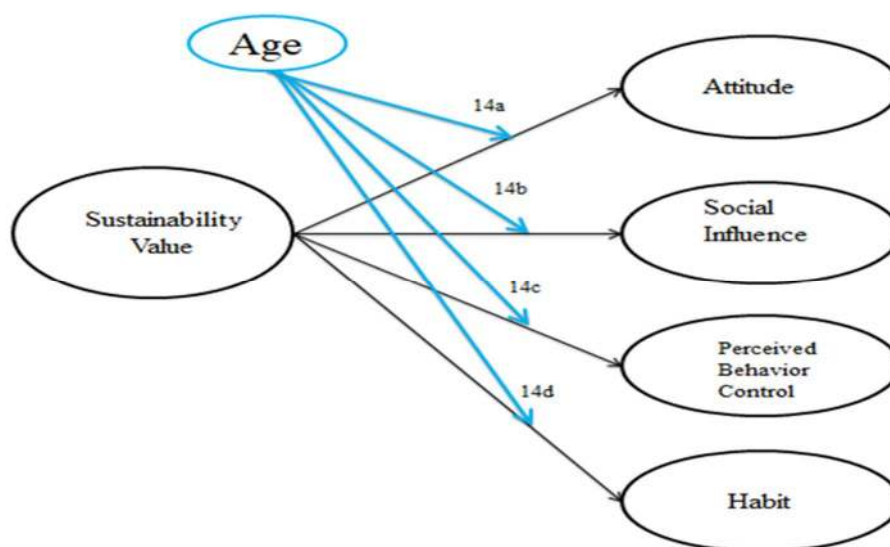


Figure 7. Model of sustainability value and pro-social theory.

According to results in Table 18, H3: Social Influence → Pro-environmental Behavioral Intention does not hold, but sustainability values and attitude have significant influence on pro-environmental behavioral intention, which shows the pro-environmental behavioral intention of subjects would not be impacted by social influence, which states the influence of value and attitude toward intention. Besides, H11: Sustainability Values → Social Influence → Pro-environmental Behavioral Intention does not hold either, which shows no significant intervening effect of social influence in this research model. The fact that only Hypothesis 14b was supported while the remaining Hypotheses 14a, 14c, and 14d were not supported showed that age only serves as mediating effect on social influence from sustainability values. Being different from the viewpoint of the UTAUT2 integration model, the results showed that sustainability values and attitude are the key preposition influential factors for pro-environmental behavioral intention, with less intervening effect on Age and significant mediating effects of attitude, perceived behavioral control, and habits.

Table 18. Results of hypothesis testing.

Hypothesis	Path	Result
H1	Sustainability Values → Pro-environmental Behavioral Intention	Supported
H2	Attitude → Pro-environmental Behavioral Intention	Supported
H3	Social Influence → Pro-environmental Behavioral Intention	Not Supported
H4	Perceived Behavioral Control → Pro-environmental Behavioral Intention	Supported
H5	Habit → Pro-environmental Behavioral Intention	Supported
H6	Sustainability Values → Attitude	Supported
H7	Sustainability Values → Social Influence	Supported
H8	Sustainability Values → Perceived Behavioral Control	Supported
H9	Sustainability Values → Habit	Supported
H10	Sustainability Values → Attitude → Pro-environmental Behavioral Intention	Supported
H11	Sustainability Values → Social Influence → Pro-environmental Behavioral Intention	Not Supported
H12	Sustainability Values → Perceived Behavioral Control → Pro-environmental Behavioral Intention	Supported
H13	Sustainability Values → Habit → Pro-environmental Behavioral Intention	Supported
H14a	Sustainability Values → Attitude	Not Supported
H14b	Sustainability Values → Social Influence	Supported
H14c	Sustainability Values → Perceived Behavioral Control	Not Supported
H14d	Sustainability Values → Habit	Not Supported

5. Discussion

5.1. Discussion

This study determined that (1) SV with six latent values will directly influence pro-social cognitive with four constructs toward pro-environmental behavioral intention; and, (2) moderating variables of age will strengthen each relationship between SV and pro-social cognition with four constructs. Eventually, a comparison of alternative forms of association between SV and pro-social cognition with four constructs toward pro-environmental behavioral intention will support the following passage: SV → pro-social cognition with four constructs toward pro-environmental behavioral intention with a moderator of age. The results of our study provided empirical support for the hypothesized research model. In this study, constructed on a foundation of literature and formed upon a series of research hypotheses, a more comprehensive understanding of sustainability values related to freedom, equality, solidarity, tolerance, respect for nature, shared responsibility, pro-social cognitive with attitude, social influence, perceived behavioral control, and habits towards pro-environmental behavioral intention with a moderator of age could be arrived at. The research framework in the study incorporated both direct and indirect variables derived from the individual fundamental values and pro-environmental behavioral intention. This framework explicitly considers SV and pro-social cognition with four constructs as the key contextual predictors for pro-environmental behavioral intention to manifest, as well as examines the effect of pro-social cognition with four constructs via a moderating demographic variable of age.

Realizing SV concepts and personal behavior intention is especially important to people because of the state of global environmental depletion and a variety of associated environmental problems. This study's objective is to better understand how SV directly affected each construct of attitude, social influence, perceived behavior control, and habit toward pro-environmental behavioral intention. As human beings in the world, everyone has a direct responsibility to become concerned regarding any matter that harms the Earth and to prevent the situation from worsening.

Understanding the effects of pro-social cognition with four constructs via a moderating demographic variable of age is of particular importance because it will help to strengthen pro-environmental behavioral intention. Our objective was to explore how the travelers' SV and how the pro-social cognition with four constructs mediated the effect between SV and pro-environmental behavioral intention with a moderated impact of age.

The results indicated the following: (1) SV positively impacted pro-environmental behavioral intention; (2) pro-social cognition with four constructs positively impacted pro-environmental behavioral intention; (3) pro-social cognition with four constructs except social influence positively mediated the effect between SV and pro-environmental behavioral intention, and (4) age positively moderated the effect between SV and social influence.

5.2. Theoretical Implications

This study was comprised of a framework which attempts to become predictive of pro-environmental behavioral intention. Moreover, this research recommends that employing theoretical pro-social models proposed in the literature can be integrated into one central framework in order to understand and predict SV along with an individual perception geared toward pro-environmental behavioral intention. The basic results of this study may provide some valuable contributions to diverse fields [19,49,50], especially when coupled with various hospitality international tourism industries. Our goal in this study was to introduce a preliminary framework which may in turn serve as a theoretical basis. In sum, this theoretical framework clarifies a constitution of current research, and it provides a starting point for further methodical research in the area of sustainable tourism industry.

This study indicates the first endeavor in comprising individual SV and the selection of travelers' choice matrix for pro-environmental, behavioral intention for theory development. The SV indicate certain fundamental values to be essential for the promotion of international relations [43–45]. Second, pro-social models motivated from self-interest intention provide better liability for personal sustainable traveling behavioral intention. This study contributes to an understanding of individual intuition of the effects between certain fundamental values and how they are related to self-interest intention toward sustainable traveling behavioral intention. Perhaps the most important theoretical and empirical evidence presented in this study was a series of directed variables indicating that structural modeling indicates pro-social cognition with four constructs of attitude, social influence, perceived behavior control, and habit best explains travelers' pro-environmental behavioral intention. Empirical findings support the positive effect on attitude, social influence, perceived behavioral control, and habit indicating the significant variables illustrating personal behavioral intention process [15,31,47–49].

Previously, Chan and Bishop [48] had established that personal attitude, social influence, perceived behavioral control, and habit greatly and directly affect one's behavioral intention. Han [15] also pinpointed that personal attitude, social influence, perceived behavioral control, and habit in travelers' decision-making progress and determined travelers' supportive appraisals toward choosing and staying at green hotels.

Third, a number of studies have revealed that travelers' attitude, social influence, perceived behavioral control, and habit are strongly associated with SV [21]. The findings revealed that SV have a positively significant impact on pro-social cognition with four constructs of being attitude, social influence, perceived behavior control, and habit. Travelers who perceive severe environmental depletion are liable to have positive attitudes favoring pro-environmental behavioral intention. They are better able to recognize social influence as it contributes to pro-environmental expenditures, and to perceive the confidence and ease of purchasing a pro-environmental product or service better than those who have less involvement with environmental matters [15,51].

Fourth, the pro-social cognitive theory involving attitude, social influence, perceived behavior control, and habit indicates that each construct mediates the relationship between sustainability values and pro-environmental behavioral intention (see Figure 6). Significant relationships were reported that identify SV and pro-environmental behavioral intention are both directly and indirectly related to the effects between SV and pro-social cognitive with four constructs. The development thus provides support for the predominant notion that, having SV, has a positive influence on pro-social cognition with four constructs, and, conclusively, upon travelers' pro-environmental behavioral intention. The results of the Sobel test shown in Table 16 demonstrate that only social influence did

not indirectly affect the relationship between sustainability values and pro-environmental behavioral intention. The other constructs of attitudes, perceived behavioral control, and habit had indirectly affected the relationship between sustainability values and pro-environmental behavioral intention (see Table 13).

Finally, this study contributes to a better understanding of SV by exploring its lantern variables and expanding upon the moderating role of age. Furthermore, SV has a positive significant impact on social influence moderated by the demographic variable of age. Further, that means SV has a positive significant impact on social pressures and opinions when moderated by age. This indicates that the aged population (+65 years of age) will have a strengthened impact relationship between SV and social influence, as displayed in Table 17. As a causal sequence, this segment of the population needs a time lag to apply their consequences [13].

5.3. Practical Implications

From a practical point of view, the results supported by the variable of age among the elder population, shows that adequately dealing with this variable can provide an enhanced path to the pro-social practice suitable for a traveler. For a pro-environmental practitioner, the travelers' sustainability value for the older population will boost their social influence toward pro-environmental hotels to become comparable to those of younger travelers. The elder travelers have become more and more concerned about health issues when persuading their companions to travel domestically and internationally and while staying at pro-environmental hotels. The presence of older travelers provides diversified health-related interests to companions during their stay at pro-environmental hotels [51]. It makes such health-related benefits readily available since they will help these travelers perceive pro-environmental lodging products that are more attractive than those with less pro-environmental lodging products.

Overall, the benefits expressed above are essential to achieve older travelers' demands and insistence for a healthy stay at a pro-environmental hotel. This segment of the market will help pro-environmental accommodation operations to be more rivaling and reinforce the involvement of the elder travelers' social influence on positive eco-friendly hotels built.

The consequences valued variables of freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility are combined with the commitment to implement pro-environmental conducts. Based on the results, elder travelers' with a greater recognition of damaging consequences, social pressures, and moral obligation were more liable to aim to select pro-environmental hotels. Practitioners would like to guide their customers' concern toward improving travelers' recognition of environmental depletion, social influence, and moral obligation to behave in keeping with a pro-environmental pattern [15,16]. For example, it is essential for eco-friendly hotel practitioners to educate their customers about their pro-environmental behaviors, as well as to bring about further consciousness of the seriousness of environmental problems. These endeavors will enhance customers' seriousness consciousness of the negative impacts of environmental problems and improve the recognized degrees of social pressure for pro-environmental behaviors, which in turn will motivate personal moral obligation to participate in an ecofriendly consumption behavioral intention for staying at pro-environmental hotels. In addition, perceiving the behavioral intention that choosing hotels can be of advantage by decreasing their ecosystem influence in efficient and effective ways in answer to the socials' developing sustainable involvement, partaking of services from state-of-the-art ecofriendly management instruction with effective sustainable-development guidelines that attract travelers who are highly attentive of negative impact, with social influence and a sense of moral norm to participate in pro-environmental behaviors will stimulate travelers' intention to choose eco-friendly hotels.

Compatible with the initial mediating framework of the pro-social theory [15,31,47–50], researchers establish that realization of environmental situations needs to be dealt with, and involving with individuals' common pro-social cognition toward guarding the environment, plays an essential role in generating attitudes, social influence, perceived behavioral control, and habits toward travelers'

pro-environmental behavior, in the construction of one's aim to stay at green hotels. The serial mediation effects of sustainability values and attitudes, social influence, perceived behavior control, habit, and attributed liability were found to have a remarkable indirect influence on intention. This finding indicates that applying the subsequent framework of the pro-social effective theory positively effects the production of behavioral intention. Researchers should realize the adequacy of this subsequent mediating theoretical framework for variables when generating a theory illustrating a pro-environmental decision-making procedure. Practitioners pursue making the best efforts to utilize ecological sustainability values, and consciousness of impact in developing behavioral intention, should improve such mediator variables wherever and whenever possible. Effectively implementing these mediating variables will enhance the values of ecological sustainability, and consciousness of impact in stimulating travelers' eco-friendly intention toward pro-environmental responsible hotels.

6. Conclusions and Recommendations

6.1. Conclusions

Beginning with some of the previous work related to pro-environmental behavioral intention, the present research has reformulated the important role played by SV and the pro-social constructs of attitude, social influence, perceived behavioral control, and habit. Generally, the analyses presented in this research revealed: (1) SV positively impacted pro-environmental behavioral intention; (2) SV positively impacted attitude, social influence, perceived behavioral control, and habit respectively; (3) attitude, perceived behavioral control, and habit positively mediated the effect between SV and pro-environmental behavioral intention respectively; and, (4) the social demographic variable of age positively moderated the effect between SV and social influence.

In purchasing behavior, most research has focused on the price factor when discussing buying. However, rather than price factor, consumers are influenced by internal and external factors in the overall purchasing behavior and decision-making process. In social psychology, theories of behavioral science are usually applied to explain the attitude and behavioral influence of users. In the field of management, people used to take TRA (Theory of Reasoned Action), TPB (Theory of Planned Behavior), or TAM (Technology Acceptance Model) as a theoretical basis to discuss user's attitude and behavior, with an obvious purpose to find out the most important influential factor on user's behavior. With gaining the great achievement and support of TRA, TPB and TAM in the field of management and behavioral science, this research developed an integrating mode of TPM and UTAUT2, to verify more constructs of user's intention, to further understand user's behaviors in details [66–70].

When conducting research of technology acceptance behavior, it should still be developed from the simplest and basic model, to sincerely add new variables on different scenarios, with taking the correlation of adding variables and original variables. UTAUT, in the past, focused on explaining the acceptance level toward new systems from employees within organizations, which takes only the external motives of technology usage, which is not applicable for explaining nonorganizational new technology adoption, and has less understanding of internal motives of users. To completely grasp the whole picture covering nonorganizational and noncompulsive new system usage such as consumer technology, Venkatech et al. [33] introduced UTAUT2, to expand the theoretical explanation coverage through taking individual and consumer related factors such as habits, motives of enjoyment into consideration. UTAUT2 has a more complicated structure comparing to UTAUT, and thus the added dimensions are more applicable in observing the nowadays consumer technology acceptance. Comprehensively, this research developed an integrating model of TPB and UTAUT2, to verify more dimensions influencing user's behavioral intention, to further elevate the explanatory ability of the model and comprehension of user's behavior.

The results of this study provide some valuable contributions to diverse fields, especially in the hospitality international tourism industries. We have attempted to bridge both the individual and ecosystem perspectives in order to test a moderated mediation model among the SV constructs

of freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility, pro-social constructs of attitude, social influence, perceived behavioral control, and habit, with pro-environmental behavioral intention. The permanent requirements for integrating moderated mediation relationships into hospitality international tourism hotel industries research means that dealing with diversified methodological developments will shed new light on a better understanding of the complicated context of hospitality international tourism industries research.

6.2. Limitation and Recommendation

We asked travelers to self-report their perception of SV, perception of pro-social constructs, and perception of pro-environmental behavioral intention. As a result, this may have caused the possibility that Common Method Variance (CMV) has affected our results. Nonetheless, in an attempt to mitigate any problems associated with self-report data by following previous procedures, this study instilled several procedures to decrease the lack of credibility and reliability due to relative CMV [71,72]. In terms of those steps, this research implemented [71,72]. CMV with the Human one-factor test which showed that the largest factor accounted for only 34.98% of the variance. In addition, the CFA findings reported that our measurement model had an acceptable fit to the data, which essentially meant that CMV did not significantly affect our research model constructs, and it should not cause problems with our results. Although it is not possible to certainly rule out the impact of CMV [71,72], the steps and statistical procedures undertaken propose that it is unlikely that CMV influenced our findings essentially.

This research took in-depth discussion on the determinant factors of traveler's choices for pro-environment behavioral intention. For the travel agencies, the results may be useful for them to understand the determinant factor and process of mental decision of travelers. This research denoted that significant research dimensions such as sustainable value, age and habits are all important variables influencing environmental behavioral intention. In which the agencies may refer to following variables on market segmentation, target customer setting and market positioning, to bring up more specific and efficient marketing campaign. For local communities, they are partnered with travel agencies with specific target customer and marketing campaign, to cooperate and schedule the following projects. Local communities are important back-up partners for the travel agencies. The research result served as an important catalyst activating the interaction mechanism. Last, in view of tourism policy making, their strategies and directions would directly influence the success of implementation of travel agencies and local communities. Tourism policy making should involve above two parties to understand the practical difficulties and key successful factor. The practical results fully showed the key influential factors of pro-environment behavioral intention are valuable reference in policy making.

Author Contributions: L.-M.C. and P.-C.C. designed the study and revised the manuscript; Y.-Y.C. collected data performed the data analysis, drafted the paper, and finalized the paper.

Acknowledgments: We appreciate the efforts of professors from CJCUC made.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Measure of the Research Constructs
SV Construct
1. Freedom
<ol style="list-style-type: none"> 1. All parents have the right to expect that they and their children will be raised free from hunger 2. All people have the absolute right to live their lives free from the fear of any violence 3. The highest level of justice should be available for all people at all times
2. Equality
<ol style="list-style-type: none"> 1. People must have equal access to the benefits generated by development regardless of whether they contributed to that development or not 2. All nations must have equal access to benefits from economic development 3. The benefits of global economy should be shared equally among all nations
3. Solidarity
<ol style="list-style-type: none"> 1. Those who benefit the most must help provide for those who benefit the least 2. Those who bear a substantial burden from environmental changes should receive assistance from those who are less burdened 3. Those who suffer the most deserve help from those who suffer the least 4. Those who benefit the most must help provide for those who benefit the least
4. Tolerance
<ol style="list-style-type: none"> 1. All human beings must respect the diversity of value beliefs across all people 2. Peace within societies invariably begins with openness toward others' ways of life 3. People must not repress any differences across societies
5. Respect for nature
<ol style="list-style-type: none"> 1. All precautions must be taken to protect natural resources in our development efforts 2. Current patterns of production must be substantially changed to protect the welfare of the natural environment 3. People must make major changes to their current consumption out of respect for nature 4. It is the obligation of a society to vigorously protect the natural environment for the benefit of future generations
6. Shared responsibility
<ol style="list-style-type: none"> 1. We are all responsible for assuring that all people's rights to freedom are maintained 2. Civilized nations must accept responsibility for improving the welfare of less fortunate individuals around the world 3. We all share responsibility when members of our global society do not tolerate cultural differences 4. It is the moral obligation of civilized nations to work together to end global injustices
Attitude (ATT)
<ol style="list-style-type: none"> 1. For me, staying at a pro-environmental hotel when traveling is good to me 2. For me, staying at a pro-environmental hotel when traveling is clever to me 3. For me, staying at a pro-environmental when traveling is happy 4. For me, staying at a green hotel when traveling is beneficial
Social influence (SI)
<ol style="list-style-type: none"> 1. People who are important to me think that I should stay at a pro-environmental hotel 2. People who impact my behavior think that I should stay at a pro-environmental hotel 3. People whose opinions that I value prefer that I should stay at a pro-environmental hotel

Measure of the Research Constructs

 Perceived behavioral control (PBC)

1. Whether or not I stay at a pro-environmental hotel when traveling is entirely up to me.
 2. I am confident that if I want, I can stay at a pro-environmental hotel when traveling.
 3. I have resources, time, and opportunities to stay at a pro-environmental hotel when traveling.
-

 Habit

1. Staying at pro-environmental hotel has become a habit for me.
 2. I have to stay at a pro-environmental hotel when traveling.
 3. Staying at a pro-environmental hotel when traveling becomes natural to me.
-

 Behavioral Intention

1. I intend to stay at a pro-environmental hotel when traveling in the future
 2. I plan to stay at a pro-environmental hotel instead of an ordinary hotel when traveling in the future
 3. I will recommend to others stay at a pro-environmental hotel
 4. Staying at a pro-environmental hotel would be one of my preference
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