Model of sustainable behavior: Assessing cognitive, emotional, and normative influence in the cruise context

Authors: H. Han, H. Olya, J. Kim, W. Kim

ABSTRACT

There is a lack of published research on individuals’ decision formation for pro-environmental behaviors while traveling on cruise ships. This study included the cognitive, affective, and normative processes related to this, and considered their interrelations in the prediction model of passenger cruising intention in an environmentally responsible way. We estimated the proposed theoretical framework using structural equation analysis. The final model was generated by altering the proposed model. The findings indicated that our conceptual framework had a sufficient level of anticipatory power for green intention and that moral and subjective norms were the most influential determinants of intention. In addition, the important interrelationships among these cognitive, affective, and normative factors were identified. Moreover, anticipated emotions and moral norm were significant mediators. Overall, the results of this study substantially supported our theoretical framework comprising the intricate associations among study variables. Implications for tourism researchers and cruise practitioners are discussed.

Keywords: Sustainable development, environmentally responsible behavior; cruise; positive and negative emotions; pro-environmental decision

Introduction

Consumers are increasingly coming to recognize the severity of environmental problems uncovered over the last few decades and are becoming more aware of ecological issues overall (Chan and Hsu, 2016; Han et al., 2010). These environmental conscious consumers,
who are well aware of the fact that the natural world is facing diverse environmental problems (e.g., water contamination, air pollution, global warming), appear to be searching for and selecting products or services from ecologically responsible firms, even paying more and accepting possible inconveniences to do this (Laroche et al., 2001; Lee et al., 2010).

Consistent with this green phenomenon in the consumer marketplace, diverse hospitality and tourism companies are active in greening their operations in a variety of ways, such as initiating varied environmental programs, implementing ecologically-friendly technologies, encouraging environmentally responsible practices among customers and employees, developing sustainable policies and guidelines, and altering operational processes (Chan and Ho, 2006; Chen and Tung, 2014; Han et al., 2010; Hsieh, 2012; Lee et al., 2010; Kim et al., 2013).

In particular, the integration of pro-environmental business technologies and practices into products or services in the cruise industry has become a significant force for the alleviation of the industry’s huge impact on the ocean and the greater environment. Because of the constant ecological issues in the cruise industry, which include water pollution, exhaustion of natural resources, climate change, and enormous demands on water and energy (Kaldy, 2011), this industry is working incredibly hard to decrease its hazardous environmental actions and become more eco-friendly (Ahmad, 2014; Klein, 2011). With the increasing green needs and growing ecological awareness of the consumer market, such greening efforts can be an imperative method to boost the competitiveness of cruise businesses (Han et al., 2016). Emerging passengers’ pro-environmental cruise trips are derived from the movement of responsible or sustainable traveling in the tourism marketplace.

Given this green trend in the competitive tourism market, it is essential to clearly understand passengers’ environmentally responsible decision-making processes and behavior as it relates to the successful pro-environmental marketing/service/operation strategies of cruise lines.
Researchers in environmental behavior and psychology generally believe that individuals’ pro-environmental decisions or behavior is often made or conducted relying on diverse cognitive triggers, affective factors, and normative driver triggers (Fornara et al., 2016; Han, 2015; Lin and Hsu, 2015; Ozaki, 2011; Steg and Vlek, 2009). Extant studies support the salience of such factors as biospheric or environmental value (De Groot et al., 2007; Mustonen et al., 2016; Stern, 2000), concern for environmental issues (Zimmer et al., 1994; Stern et al., 1999), awareness of consequences (Chan et al., 2014; Milfont et al., 2010), and ascribed responsibility (Bamberg and Möser, 2007; De Groot and Steg, 2008) in explaining environmentally or socially responsible behavior. In addition, evidence that supports the importance of positive or negative anticipated forms of emotions (e.g., anticipated feelings of pride and guilt) (Harth et al., 2013; Onwezen et al., 2013), social/subjective norms (Jansson, 2011; Klöckner, 2013; Matthies et al., 2012), and personal norm (Hunecke et al., 2001; Schwartz, 1977) appears in previous studies.

Despite the importance of the cognitive, affective, and normative processes for the explication of consumer decision formation (Hunter, 2006; Oliver, 1997), little research has involved this combined approach for understanding of travelers’ pro-environmental decision-making processes. In addition, little research has utilized the multiple dimensional approach of the cognitive process or employed the conjoint use of moral and social norms as a normative process. Moreover, the role of anticipated affects in activating moral norm has rarely been examined in tourism. In sum, there exists a substantial lack of empirical and published research that has exploited the distinct role of multiple cognitive factors, anticipated forms of emotions, and normative factors in building cruise travelers’ pro-environmental intentions within one comprehensive theoretical framework.

Given these research needs, the general aim of the present study was to build a conceptual framework comprising the cognitive process, affective process, and normative
process in order to offer a clear understanding of travelers’ environmentally responsible
decision-making processes while cruising. In particular, this study was designed to test the
possible associations among multi-cognitive dimensions (biospheric value, environmental
concern, awareness of consequences, and ascription of responsibility), anticipated emotions
(positive and negative), and normative factors (social and moral norms), and to examine the
influence of such relationships on cruise customers’ decision formation. In addition,
follow the associations expected based on the proposed theoretical model and research
outcomes in previous studies, the intricate indirect (mediated) relationships among study
constructs were objected to be tested. Moreover, the comparative importance of the included
constructs was objected to be evaluated.

**Conceptual Background and Hypotheses**

Our conceptual model is exhibited as a graphical picture in Figure 1. Our conceptual
framework is composed of four cognitive factors (i.e., biospheric value, environmental
concern, awareness of consequences, and ascription of responsibility), two affective dimensions
(i.e., positive and negative anticipated emotions), and two normative dimensions (i.e., social
norm and moral norm) as drivers of environmentally responsible intentions.

Overall, the model includes a total of nine study variables and sixteen research hypotheses
linking the constructs.

(Insert Figure 1)

**Cognitive Dimensions**

Biospheric value, environmental concern, awareness of consequences, and ascription of
responsibility have long been believed as activators of moral norm and as cognitive drivers of environmentally responsible decisions (Han, 2014, 2015; Harland et al., 2007; Steg and De Groot, 2010). According to De Groot et al. (2007), biospheric value indicates one’s perception of value related to the biosphere and the environment that are central in his/her life. This biospheric value is one of the major aspects of personal values referring to the criteria that individuals utilize to choose and justify behaviors and to evaluate the self/others and events (Schwartz, 1992). This criteria is very general, transcending particular situations, and it serves as a guide for correct and appropriate behavior (Fornara et al., 2016). Environmental concern is a global concept that refers to “feelings about many different green issues” (Zimmer et al., 1994, p. 64). In addition, according to Milfont et al. (2010), while awareness of consequences refers to “people’s understanding that their actions might have consequences for the welfare of others” (p. 124), ascription of responsibility indicates “people’s assignment of responsibility for their actions” (p. 124).

Biospheric value is the main aspect of value orientation, which indicates the guiding principles essential in individuals’ life, particularly with regard to environmental behavior (Hedlund, 2011; Schwartz, 1992). Environmental concern is the core in forming ecological worldview (Stern et al., 1999). Thus, biospheric value and environmental concern are also known as environmental value and ecological worldview, respectively. Moreover, awareness of consequences and ascription of responsibility in environmental behavior are interchangeably used with the terms as problem awareness and perceived ability to reduce threat, respectively (Han, 2015; Stern 2000). Individuals’ pro-environmental decision or behavior is triggered by moral obligation, which in turn is influenced by such specific cognitive factors as biospheric value (Schwartz, 1992; Stern, 2000), environmental concern (Kim and Han, 2010; Mostafa, 2006), awareness of consequences (Chan et al., 2014), and ascribed responsibility (Han, 2014). Accordingly, the importance of these cognitive factors in
pro-environmental behavior has not been overemphasized in the existing literature.

**Positive and Negative Anticipated Emotions**

The criticality of the emotional influence on the eco-friendly decision-making process and behavior has also been supported in a variety of environmental contexts (e.g., Carrus et al., 2008; Harth et al., 2013; Klöckner and Matthies, 2004). Among a range of self-conscious emotions, researchers identified that positive anticipated emotions comprising of pride, accomplishment, confidence, and a sense of worth and negative anticipated emotions containing guilt, remorse, sorrow, and negativity are particularly relevant to the pro-environmental sector (Bamberg and Möser, 2007; Han, 2014; Onwezen et al., 2013). It appeared that these affective factors evoked after the assessment of specific eco-friendly behavior (Lewis, 1993) are effective in accounting for various pro-environmental decisions and actions (Bamberg and Möser, 2007; Han, 2014; Harth et al., 2013; Klöckner and Matthies, 2004; Lerner and Keltner, 2000). Favorable and unfavorable anticipated emotions represent a crucial way where emotions determine what a decision-maker selects and how he/she chooses it (Bagozzi et al., 2003).
Moral Norm and Social Norm

Moral norm indicates “a specific motivational basis for the realization of behavior, which manifests itself in a feeling of moral obligation” (Hunecke et al., 2001, p. 832). Hunecke et al.’s (2001) definition of moral norm is coherent with Schwartz’s (1977) early description that moral norm is one’s personal expectation of a certain behavior in a particular situation, which is experienced as a feeling of personal or ethical obligation. These explications indicate that the central aspect of moral norm is individuals’ sense of personal or ethical obligation to perform a specific behavior. In this regard, the behavioral relevance of moral norm is confined to actions comprising a moral or ethical dimension (Han, 2015; Hunecke et al., 2001).

Social norm refers to “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991, p. 188). That is, this norm is associated with individuals’ perception regarding what other people think (Thøgersen, 2006). Thus, a distinction has clearly been made between this social norm and the moral norm, whose key aspect is personal moral obligation. Social norm is conceptually coherent with subjective norm within theories derived from self-interest motives (e.g., theory of reasoned action and theory of planned behavior) in that both concepts concern other people’s expectation about one’s action in a given situation (Fornara et al., 2016; Han, 2015; Schultz et al., 2008). This social norm is therefore alternatively utilized with the term subjective norm in the literature (Han, 2015).
Impact of Cognitive Factors on Affective Factors and Moral Norm

Such variables as environmental concern, awareness of consequences, biospheric value, and ascription of responsibility are cognitions/perceptions (Schwartz, 1977; Stern, 2000), whereas anticipated emotions are affective factors (Han et al., 2016; Perugini and Bagozzi, 2001). In addition to affective variables, the factors with cognitive nature influence individuals’ moral obligation to take a pro-environmental action; and both cognitive and affective variables are significantly interrelated (Han, 2014). In other words, anticipated affective reactions are derived from one’s cognitive/perceptual beliefs or assessments; and such relationships result in a felt obligation toward an environmentally responsible action (Bamberg and Möser, 2007; Han, 2014; Onwezen et al., 2013). According to these researchers, anticipated emotions form based on the outcomes of cognitive process in that cognitive factors often strengthen affective responses in a pro-environmental context. These cognitive variables (e.g., problem awareness, ascribed responsibility, biospheric/environmental value, ecological concern) also significantly contribute to increasing personal norm in the formation of pro-social or pro-environmental decision (Han et al., 2016; Schwartz, 1977; Steg and Vlek, 2009; Stern et al., 1999, Stern, 2000).

H1: Cruise travelers’ biospheric values have a positive and significant impact on their positive anticipated emotions.

H2: Cruise travelers’ environmental concern has a positive and significant impact on their positive anticipated emotions.

H3: Cruise travelers’ awareness of consequences has a positive and significant
impact on their positive anticipated emotions.

H4: Cruise travelers’ ascription of responsibility has a positive and significant impact on their positive anticipated emotions.

H5: Cruise travelers’ biospheric values have a negative and significant impact on their negative anticipated emotion.

H6: Cruise travelers’ environmental concern has a negative and significant impact on their negative anticipated emotions.

H7: Cruise travelers’ awareness of consequences has a negative and significant impact on their negative anticipated emotions.

H8: Cruise travelers’ ascription of responsibility has a negative and significant impact on their negative anticipated emotions.

H9: Cruise travelers’ biospheric values have a positive and significant impact on their moral norm.

H10: Cruise travelers’ environmental concern has a positive and significant impact on their moral norm.

H11: Cruise travelers’ awareness of consequences has a positive and significant impact on their moral norm.

H12: Cruise travelers’ ascription of responsibility has a positive and significant impact on their moral norm.
Relationship Between Anticipated Emotions and Moral Norm

Extant literature on environmental studies indicates that anticipated emotions are imperative concepts in explicating one’s pro-environmental decision-making process and behavior (Bamberg et al., 2007; Hunecke et al., 2001; Kim et al., 2013). Many studies have explicitly investigated the role of expected post-behavioral affective reactions in relation to norm-activation process and pro-environmental behavior (Han, 2014; Steg and Vlek, 2009; Onwezen et al., 2013). According to Schwartz’s (1977) early indication, individuals’ positive anticipated feeling stimulates them to conform to their moral obligation; and their negative anticipated emotion motivates them to avoid breaking such personal moral norm. Recently, Han (2014) provided empirical evidence that positive and negative anticipated feelings trigger personal norm, playing an important distinct role in travelers’ eco-friendly intention generation process. Positive and negative aspects of anticipated emotions are vital pro-environmental affective factors since they significantly increase a felt personal obligation (moral norm) that directly activates pro-environmental intention or behavior (Onwezen et al., 2013; Thøgersen, 2009; Tracy and Robins, 2004).

H13: Cruise travelers’ positive anticipated emotions have a positive and significant impact on their moral norm.

H14: Cruise travelers’ negative anticipated emotions have a negative and significant impact on their moral norm.
Relationship Between Social and Moral Norms

Although the results of extant studies on environmental behavior are not always consistent, the concept of social norm is widely regarded to be a decisive factor of moral norm and pro-environmental intention or behavior (Bamberg and Möser, 2007; Han, 2014, 2015; Hunecke et al., 2001; Klöckner, 2013). Since social norm delivers the behavioral standards that a salient social reference group considers as proper in a particular context, one’s moral norm is believed to be developed based on social norm (Fornara et al., 2016). Social norm has been proven to exert a significant influence on one’s feeling of moral obligation for an environmentally responsible action in diverse contexts (littering, recycling, energy saving, etc.) (Carrus et al., 2009; Ferguson et al., 2011; Fornara et al., 2011). An impact of social norm on the activation of moral norm has been embedded in diverse frameworks explicating pro-social or pro-environmental behaviors (Hunecke et al., 2001; Han, 2015). These studies demonstrated that social norm acts as an intensifier of moral norm.

H15: Cruise travelers’ social norm has a positive and significant impact on their moral norm.

Relationship Between Moral Norm and Environmentally Responsible Intentions

Researchers agree that this moral norm is the most proximal antecedent of pro-environmental intention or behavior (Choi et al., 2015; Fornara et al., 2016; Fransson and Biel, 1997; Schwartz and Bardi, 2001; Stern, 2000). According to Fransson and Biel’s (1977) early indication, one’s moral norm is associated with his/her personal belief about what is the right thing to do for his/her positive self-evaluation; and this morality affects pro-social decision/behavior. In their recent study about anticipating intention for the improvement of
household energy efficiency, Fornara et al. (2016) empirically demonstrated that homeowners’ moral obligations are an important direct trigger of their intention to use renewable energy. Individuals often engage in a specific pro-environmental behavior since they feel moral obligation to act properly when they have a feeling of responsibility for the harmful consequences of their behaviors on the natural environment (Schwartz and Bardi, 2001; Stern, 2000).

H16: Cruise travelers’ moral norm has a positive and significant impact on their environmentally responsible intentions.

Methodology

Questionnaire Development and Measurement

The survey questionnaire including an introductory letter, measures for study variables, and queries for demographic information was developed. The initial version of our questionnaire was pre-tested with graduate students whose major is hospitality and tourism and with cruise trip experience within the last three years. After a slight improvement was made based on the pre-test result, the questionnaire was subjected to an expert-review process. Industry and academic cruise experts thoroughly reviewed the questionnaire. The final version of the survey questionnaire was developed after these experts’ minor corrections. All measures used in this study are exhibited in the Appendix. Multiple-item measures and a seven-point scale were employed for all variables within the research model. The details are as follows:

Biospheric value included four items adapted from Jakovcevic and Steg (2013) and Stern et al. (1999). Environmental concern was measured using three items employed from Cordano et al. (2011) and Stern et al. (1999). Awareness of consequences contained four items adapted from Bamberg and Schmidt (2003) and Han et al. (2016).
Ascribed responsibility was assessed with three items employed from Onwezen et al. (2013) and Van Riper and Kyle (2014). Positive anticipated emotion was evaluated with four items adapted from Onwezen et al. (2013) and Perugini and Bagozzi (2001). Negative anticipated emotion was evaluated using four items employed from Onwezen et al. (2013) and Perugini and Bagozzi (2001). Social norm included three items adapted from Ajzen (1991) and Han (2014–Moral norm was measured with four items employed from Onwezen et al. (2013) and Van Riper and Kyle (2014). Environmentally responsible intentions contained three items adapted from Minton and Rose (1997) and Stern et al. (1999).

**Data Collection and Sample Characteristics**

We tested our theoretical model with the data collected from a Web-based survey method. Using the survey system and database of an online market research company, an e-mail invitation of the survey was sent to general US cruise passengers. Only passengers who had taken a cruise within the last year were invited to participate in the survey and complete the questionnaire. Survey instructions and description of the research were given to all participants in the initial stage of the survey when they clicked the survey link. The data for this research was collected through this process. As a result, a total of 307 completed responses were obtained. After the elimination of multivariate outliers using a Mahalanobis distance check and unusable cases, a total of 302 responses were ultimately retained for the further analysis.
Among the participants in the usable sample (n = 302), 39.7% were male cruise travelers; and 60.3% were female cruise travelers. All of them indicated that their most recent cruise trip was within the past 12 months, a requisite of survey participation. Specifically, 5.6% of the respondents indicated that they traveled on a cruise within the last month; 29.8% reported within the past three months; 59.3% indicated within the last six months; and 84.8% reported within the past nine months in a cumulative manner. Regarding the frequency of cruise product use for the past five years, 36.5% indicated that they had taken a cruise vacation twice, followed by once (26.9%), three times (17.9%), four times (8.0%), five times (3.7%), and six times or more (7.0%). The majority of the participants’ age category was 25 – 44 years old (43.4%), followed by 45 – 64 years (34.4%), 24 years or younger (9.3%), and 65 years or older (12.9%). In terms of participants’ income level, the highest category was over $100,000 (23.2%), closely followed by an income between $55,000 and $69,999 (21.2%). Most participants reported their ethnic background as Caucasian/White (74.5%). Lastly, in terms of education level, a majority of the respondents possessed a bachelor’s degree (41.7%) or graduate degree (15.6%).
Results

Confirmatory Factor Analysis

To analyze the collected data, SPSS and AMOS were utilized. The measurement model was produced. Findings of the confirmatory factor analysis (CFA) with the maximum likelihood estimation approach indicated that the model contained a sufficient level of fit to the data ($\chi^2 = 945.693$, $df = 397$, $p < .001$, $\chi^2 / df = 2.382$, RMSEA = .068, CFI = .938, IFI = .938, TLI = .927). The CFA results and inter-correlations matrix among research variables are reported in Table 1. Internal consistency among observed variables for each latent construct was first evaluated. Our calculation revealed that values of composite reliability were all greater than .600 (biospheric value = .886, environmental concern = .786, awareness of consequences = .889, ascription of responsibility = .934, positive anticipated emotion = .933, negative anticipated emotion = .941, social norm = .939, moral norm = .907, environmentally responsible intentions = .951). Thus, internal consistency of the measures for each construct was evident. Subsequently, average variance extracted (AVE) values were calculated. The AVE shows the amount of shared (common) variance among each construct indicators (Hair et al. 2010). The calculated values were all above the minimum threshold of .500 (biospheric value = .662, environmental concern = .563, awareness of consequences = .670, ascription of responsibility = .877, positive anticipated emotion = .776, negative anticipated emotion = .800, social norm = .837, moral norm = .710, environmentally responsible intentions = .865), thus supporting the convergent validity. These values were then compared to the squared correlation between unobserved latent factors. As reported in Table 1, the AVE values...
were all greater than these correlations. Discriminant validity was accordingly supported.

The $\chi^2/df$ value of 2.382 in the measurement model falls within an acceptable range of 2 – 5 (Marsh and Hocevar, 1998), and other practical fit indices were adequate. The reliability values were well above .600 as suggested by Hair et al. (2010). All standardized factor loadings were significant ($p < .01$). This indicated the convergence of the indicators (observed variables) with their associated underlying factors (Anderson and Gerbing, 1988). This result with the appropriate fit of the measurement model provided empirical evidence of unidimensionality, demonstrating the presence of a single strait underlying each set of measurement items (Hattie, 1985).

**Structural Equation Modeling**

A structural model was produced. Findings of the structural equation modeling (SEM) with the maximum likelihood estimation method revealed that the proposed structural model included an acceptable level of fit to the data ($\chi^2 = 1039.352, df = 407, p < .001, \chi^2/df = 2.554, RMSEA = .072, CFI = .928, IFI = .929, TLI = .918$). After preliminary data analysis, two new paths were added by taking the modification indices into account, which were wholly justifiable for literature-based theoretical reasons. The goodness-of-fit of this revised model was satisfactory ($\chi^2 = 1024.416, df = 405, p < .001, \chi^2/df = 2.529, RMSEA = .071, CFI = .930, IFI = .930, TLI = .919$). The insertion of the paths strengthened the general model fit and fit indices ($\Delta \chi^2 = 14.936, df = 2, p < .01$). The details about the results of this final model predicting cruise travelers’ environmentally responsible intentions are shown in Figure 2 and Table 2.
This model has a satisfactory level of explanation power for intentions in that the variables within the framework explained about 76.1% of the variance in intentions. In addition, approximately 84.1% of the total variance in moral norm was accounted for by its predictors. Moreover, cognitive factors explained about 37.5% and 9.6% of the variance in positive and negative anticipated emotions, respectively. The hypothesized associations among research variables were subsequently tested. The associations between cognitive factors and positive anticipated affect were evaluated (H1 – H4). Results indicated that positive anticipated emotion was a significant function of biospheric value (β = .279, p < .01), environmental concern (β = .180, p < .01), and awareness of consequences (β = .272, p < .01), thus supporting hypotheses 1, 2, and 3. Yet, the impact of ascribed responsibility on positive anticipated emotion (β = .031, p > .05) was not significant. Thus, hypothesis 4 was not supported.

The proposed relationships between cognitive factors and negative anticipated emotion were evaluated (H5 – H8). Findings showed that both environmental concern (β = -.195, p < .05) and ascribed responsibility (β = -.293, p < .01) exerted a significant influence on negative anticipated emotion. Hence, hypotheses 6 and 8 were supported. However, the influence of biospheric value (β = -.113, p > .05) and awareness of consequences (β = -.070, p > .05) on negative anticipated emotion was not significant. Therefore, hypotheses 5 and 7 were not supported. The hypothesized impact of cognitive factors on moral norm was assessed (H9 – H12). Our results revealed that biospheric value (β = .096, p < .01), environmental concern (β = .328, p < .01), awareness of consequences (β = .300, p < .01), and ascribed responsibility (β = .122, p < .01) have a positive and significant influence on
moral norm. These results supported hypotheses 9, 10, 11, and 12.

The impact of anticipated emotions was assessed (H13–H14). It was found that while positive anticipated emotion is significantly associated with moral norm (β = .106, p < .01), negative anticipated emotion was not significantly related to moral norm (β = .040, p > .05). Thus, hypothesis 13 was supported, but hypothesis 14 was not supported. Regarding the social norm and moral norm relationship (H15), moral norm was found to be a significant function of social norm (β = .253, p < .01). Thus, hypothesis 15 was supported.

The hypothesized influence of moral norm on environmentally responsible intentions was tested (H16). The direct link was found to be significant (β = .706, p < .01), supporting hypothesis 16. The two added paths from negative anticipated emotion (β = -.107, p < .01) and social norm (β = .197, p < .01) to intentions were also significant.

The indirect influence of research variables on pro-environmental intentions was examined. Our results showed that social norm significantly influenced intentions indirectly through moral norm (β SN-MN-ERI = .179, p < .01). Thus, moral norm played a significant mediating role in this relationship. In addition, our findings showed that biospheric value (β BV-PAE & NAE-MN-ERI = .097, p < .05), environmental concern (β EC-PAE & NAE- MN-ERI = .261, p < .01), and awareness of consequences (β AC-PAE & NAE-MN-ERI = .237, p < .01) significantly influenced pro-environmental intentions via anticipated emotions and moral norm. These results supported a significant mediating role of both anticipated emotions and moral norm in these relationships. Lastly, regarding the total impact of study constructs, as reported in Table 2, the moral norm included the greatest influence on intentions (β = .706, p < .01), followed by social norm (β = .376, p < .01).

**Discussion**

**Summary of the Research**
The present study provides a deeper understanding of individuals’ decision-making process for cruise traveling in an environmentally responsible way. Specifically, this study identified the possible distinctive role of variables within cognitive, affective, and normative processes in triggering cruise travelers’ environmentally responsible intentions. In addition, the present study tested the interrelationships among constructs within such processes. The proposed theoretical framework was significantly improved by integrating additional paths. The associations within the improved model were generally supported. The model explained a satisfactory amount of total variance to explain why individuals intend to engage in environmentally responsible cruise traveling accepting some possible inconveniences.

**Relative Importance of Moral Norm**

Moral norm emerged as the most influential predictor of individuals’ environmentally responsible intentions while cruise traveling. This finding supported the notion that one who perceives a moral imperative to behave in an eco-friendly way feels morally obliged to act in a consistent manner (Fornara et al., 2016; Van der Werff et al., 2013).

Regarding the triggers of moral norm within our conceptual framework, it appeared that
cognitive factors such as biospheric value, environmental concern, awareness of consequences, and ascribed responsibility along with positive anticipated emotion and social norm significantly increase cruise travelers’ sense of moral obligation for pro-environmental behavior.

social variables. For instance, by using diverse channels/methods, helping current and potential cruise customers (1) know that protecting the environment or respecting the Earth is valuable, (2) understand that mankind is severely abusing the natural environment and resources, (3) be aware that the tourism industry, including cruises, generates huge impacts on the environment causing environmental deterioration, (4) know that every traveler is jointly responsible for such environmental harm, (5) know that traveling in a sustainable way generates feelings of pride, and (6) recognize that most people in society definitely want travelers to protect the environment can be an efficient way to increase their moral obligation, which in turn significantly boosts their willingness to practice environmentally responsible actions while traveling on a cruise.

Impact of Anticipated Emotions

Concerning the role of anticipated emotions, the direct connection between positive anticipated emotion and moral norm was revealed. In contrast, there was no direct relationship between negative anticipated emotion and moral norm. The direct connection from this negative anticipated emotion to environmentally responsible intention was nevertheless significant. This result is partially in accordance with previous research that identified the direct relationship between anticipated emotions and moral/personal norm in
explaining environmental behavior (Bamberg et al., 2007; Han, 2014; Onwezen et al., 2013).

Enriching our knowledge regarding the role of anticipated emotions, our findings informed that cruise passengers’ positive predicted form of emotions contributes to activating their moral norm by directly eliciting their moral obligation to behave pro-environmentally while traveling, whereas their negative anticipated emotions directly triggers passengers’ environmentally responsible decisions without a connection with moral norm.

**Mediating Effect of Variables**

Moral norm and anticipated emotions appeared as important mediators in the proposed theoretical framework. In particular, moral norm significantly mediated the impact of social norm on environmentally responsible intentions; and both anticipated emotions and moral norm together significantly mediated the influence of biospheric value, environmental concern, and awareness of consequences on intentions. This finding is in line with previous studies that stressed the important mediating impact of moral norm or anticipated emotions (Han, 2014; Hunecke et al., 2001; Klöckner, 2013; Steg and De Groot, 2010; Zhang et al., 2013). While being aware of the mediating characteristics of these constructs, researchers need to carefully exploit them when building a conceptual framework for the elucidation of customers’ pro-environmental decision formation and behavior.

**Impact of Social Norm**

Concerning the hypothesized role of social norm, it appeared that social norm significantly increases moral norm, which in turn enhances environmentally responsible intentions via
moral norm. Some research in the existing literature has asserted the conjoint use of social norm and moral norm as a normative process for the explication of environmental decision-making and behavior (Bamberg et al., 2007; López-Mosquera and Sánchez, 2012). Consistently, the present study addressed the importance of social norm in making cruise travelers feel morally obliged to behave ecologically, directly influencing their willingness for environmentally responsible actions while cruising. Results of this study substantially supported the theoretical models in the extant literature framed on both pro-social/environmental and self-interest motives (e.g., Bamberg and Möser, 2007; Fornara et al., 2016; Han, 2015; Hunecke et al., 2001).

**Importance of the Cognition – Affect Relationship**

Regarding the proposed impact of cognitive factors on affective dimensions, the relationships were partially supported. In particular, it was revealed that the presence of cruise customers’ biospheric value, concern for the environment, and problem awareness evokes their positive anticipated feelings for sustainable actions while cruising; the presence of their ecological concern and ascribed responsibility for the existing environmental problems forms their unfavorable anticipated feelings for environmentally irresponsible behaviors while traveling on a cruise. This result is consistent with existing studies that emphasized the pivotal role of the cognition – affect relationship in individuals’ decision-making processes not only in consumer behavior (Hunter, 2006; Oliver, 1997, 1999) but also in environmental behavior (Bamberg and Möser, 2007; Onwezen et al., 2013). Overall, our finding demonstrated the necessity of involving the combination of cognitive and affective processes into the theoretical framework of cruise travelers’ eco-friendly decision-making processes.

**Limitations**
The present research was not free from limitations. First, like other socio-psychological
studies/theories relating to individuals’ decision-making processes (e.g., Ajzen, 1991; Ajzen
and Fishbein, 1980; Perugini and Bagozzi, 2001; Schwartz, 1977), this research investigates
travelers’ general decision formation. Future research should focus either on repeat purchase
or pre-purchase decision-making processes to better assess environmentally responsible
behavior. Second, survey respondents were from various regions across the US. Do cross-
national differences exist? Additional research is necessary to determine whether or not the
study results can be generalized to different nations. Third, while all pre-test participants were
knowledgeable academics, general/actual cruise customers were not part of the pre-test
process. Future research should include pre-test participants who more accurately represent
the average US cruise traveler.

Conclusion

The present study considerably adds to our comprehension of travelers’ environmentally
responsible decision-making processes in the cruise sector by putting cognitive factors,
affective drivers, and normative factors together into one comprehensive theoretical framework.
That is, this study effectively utilized the imperative drivers of pro-environmental
behaviors and successfully examined the intricate relationships among them for better
understanding of passengers’ willingness to behave pro-environmentally while cruise
traveling. Previous studies involved one of the affective-centered, cognitive-focused, or
normative-centered views to explicate pro-environmental decision/behavior. The present
research provides empirical evidence that considering such views simultaneously is even more
capable of explaining the customer decision-making process. This research was the first
to employ such integrative views in the cruise context. This research thus includes strong
meanings in theory and practice in the cruise industry.
Appendix

Biospheric value

*Please indicate to what extent the following are important as guiding principles in your life.*

Not very important [1] – Very important [7]

- Preventing pollution
- Respecting the Earth
- Unity with nature
- Protecting the environment

Environmental concern

*Strongly disagree [1] – Strongly agree [7]*

- The balance of nature is very delicate and easily upset.
- Humans are severely abusing the environment.
- The Earth is like a spaceship with limited room and resources.

Awareness of Consequences

*Strongly disagree (1) – Strongly agree (7)*

- The cruise industry can cause ocean pollution, climate change, and exhaustion of natural resources.
- Cruise tourism can possibly generate huge environmental impact on the ocean and the wider environment.
- The cruise industry can cause environmental deterioration (e.g., waste from rooms, dining, and other ship facilities, excessive use of energy/water/fuel).

Ascription of responsibility

*Strongly disagree (1) – Strongly agree (7)*

- I believe that every cruise traveler is partly responsible for the environmental problem caused by the cruise industry.
- I feel that every cruise traveler is jointly responsible for the environmental deterioration caused by cruise trips.
- Every cruise traveler must take responsibility for the environmental problems caused by cruise trips.

Positive anticipated emotion

*Image that you are traveling on a cruise in an environmentally responsible way that minimizes its negative impact on the ocean and wider environment. How would you feel?*

Not at all (1) – Very much (7)

- I feel proud.
- I feel accomplished.
- I feel confident.
- I feel worthwhile.
Negative anticipated emotion

*Image that you fail to travel on a cruise in an environmentally responsible way that minimizes its negative impact on the ocean and wider environment. How would you feel?*

Not at all (1) – Very much (7)

I feel guilty.
I feel remorseful.
I feel sorry.
I feel bad.

Social norm

*Strongly disagree (1) – Strongly agree (7)*

Most people who are important to me think I should perform environmentally responsible practices while traveling on a cruise.
Most people who are important to me would want me to perform environmentally responsible practices while traveling on a cruise.
People whose opinions I value would prefer me perform environmentally responsible practices while traveling on a cruise.

Moral norm

*Strongly disagree (1) – Strongly agree (7)*

I feel an obligation to take pro-environmental actions while traveling on a cruise.
Regardless what other people do, because of my own values/principles I feel that I should behave in an environmentally friendly way while traveling on a cruise.
I feel that it is important to make cruises environmentally sustainable, reducing the harm to the ocean and wider environment.
I feel morally obliged to minimize human impact on marine resources while traveling on a cruise.

Environmentally responsible intentions

*Strongly disagree (1) – Strongly agree (7)*

To protect the environment, I am willing to follow the cruise instructions to perform required environmental practices while traveling on a cruise.
To be environmentally responsible, I would be willing to accept any inconvenience (e.g., recycling, reducing water/energy use, decreasing wastage, reusing towels/linens) on a cruise.
To be environmentally responsible, I will make an effort to practice eco-friendly actions while traveling on a cruise.

References


Tourism 18(7): 90-914.


**Table 1. The Measurement Model Results**

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Note1. BV = biospheric value, EC = environmental concern, AC = awareness of consequences, AR = ascription of responsibility, PAE = positive anticipated emotion, NAE = negative anticipated emotion, SN = social norm, MN = moral norm, ERI = environmentally responsible intentions

Note2. Goodness-of-fit statistics: $\chi^2 = 945.693$, $DF = 397$, $p < .001$, $\chi^2/DF = 2.382$, RMSEA = .068, CFI = .938, IFI = .938, TLI = .927

Note3. Squared correlations are in parentheses.
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Total impact on ERI:

- MN = .706**
- SN = .376**
- PAE = .075
- NAE = -.078
- BV = .097*
- EC = .261**
- AC = .237**
- AR = .065

Total variance explained:

- R² for ERI = .761
- R² for MN = .841
- R² for PAE = .375
- R² for NAE = .096

Indirect impact:

- β_{SN-MN-ERI} = .179**
- β_{PAE-MN-ERI} = .072
- β_{NAE-MN-ERI} = .028
- β_{BV-PAE-NAE-MN-ERI} = .094*
- β_{EC-PAE-NAE-MN-ERI} = .261**
- β_{AR-PAE-NAE-MN-ERI} = .065

Goodness-of-fit statistics:

- (proposed model): χ² = 1039.352, DF = 407, p < .001, χ²/DF = 2.554, RMSEA = .072, CFI = .928, IFI = .929, TLI = .918
- (revised model): χ² = 1024.416, DF = 405, p < .001, χ²/DF = 2.529, RMSEA = .071, CFI = .930, IFI = .930, TLI = .919

Note. BV = biospheric value, EC = environmental concern, AC = awareness of consequences, AR = ascription of responsibility, PAE = positive anticipated emotion, NAE = negative anticipated emotion, SN = social norm, MN = moral norm, ERI = environmentally responsible intentions
**Figure 1. Conceptual Model**

Note. BV = biospheric value, EC = environmental concern, AC = awareness of consequences, AR = ascription of responsibility, PAE = positive anticipated emotion, NAE = negative anticipated emotion, SN = social norm, MN = moral norm, ERI = environmentally responsible intentions
**Figure 2. The Structural Model Assessment (Revised Model)**

Note 1. BV = biospheric value, EC = environmental concern, AC = awareness of consequences, AR = ascription of responsibility, PAE = positive anticipated emotion, NAE = negative anticipated emotion, SN = social norm, MN = moral norm, ERI = environmentally responsible intentions.


Note 3. $R^2$ values for AFP, AFG, MN, and ERI in the proposed model were .375, .096, .859, and .709, respectively.


Note 5. Chi-square difference test between the original and revised models: $\Delta \chi^2 = 14.936$ ($\Delta df = 2$), $p < .01$. 