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

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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,

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4 who are well aware of the fact that the natural world is facing diverse environmental
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6 problems (e.g., water contamination, air pollution, global warming), appear to be searching for
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8 and selecting products or services from ecologically responsible firms, even paying more and
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10 accepting possible inconveniences to do this (Laroche *et al.*, 2001; Lee *et al.*, 2010).

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12 Consistent with this green phenomenon in the consumer marketplace, diverse hospitality
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14 and tourism companies are active in greening their operations in a variety of ways, such as
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16 initiating varied environmental programs, implementing ecologically-friendly technologies,
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18 encouraging environmentally responsible practices among customers and employees,
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20 developing sustainable policies and guidelines, and altering operational processes (Chan and
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22 Ho, 2006; Chen and Tung, 2014; Han *et al.*, 2010; Hsieh, 2012; Lee *et al.*, 2010; Kim *et al.*,
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24 2013).
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28 In particular, the integration of pro-environmental business technologies and practices
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30 into products or services in the cruise industry has become a significant force for the alleviation
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32 of the industry's huge impact on the ocean and the greater environment. Because of the constant
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34 ecological issues in the cruise industry, which include water pollution, exhaustion of natural
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36 resources, climate change, and enormous demands on water and energy
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38 (Kaldy, 2011), this industry is working incredibly hard to decrease its hazardous
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40 environmental actions and become more eco-friendly (Ahmad, 2014; Klein, 2011). With the
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42 increasing green needs and growing ecological awareness of the consumer market, such
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44 greening efforts can be an imperative method to boost the competitiveness of cruise
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46 businesses (Han *et al.*, 2016). Emerging passengers' pro-environmental cruise trips are
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48 derived from the movement of responsible or sustainable traveling in the tourism marketplace.
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50 Given this green trend in the competitive tourism market, it is essential to clearly understand
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52 passengers' environmentally responsible decision-making processes and behavior as it relates to
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54 the successful pro-environmental marketing/service/operation strategies of cruise lines.
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3 Researchers in environmental behavior and psychology generally believe that
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5 individuals' pro-environmental decisions or behavior is often made or conducted relying on
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7 diverse cognitive triggers, affective factors, and normative driver triggers (Fornara *et al.*,
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9 2016; Han, 2015; Lin and Hsu, 2015; Ozaki, 2011; Steg and Vlek, 2009). Extant studies
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11 support the salience of such factors as biospheric or environmental value (De Groot *et al.*, 2007;
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13 Mustonen *et al.*, 2016; Stern, 2000), concern for environmental issues (Zimmer *et al.*, 1994;
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15 Stern *et al.*, 1999), awareness of consequences (Chan *et al.*, 2014; Milfont *et al.*, 2010),
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17 and ascribed responsibility (Bamberg and Möser, 2007; De Groot and Steg, 2008) in
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19 explaining environmentally or socially responsible behavior. In addition, evidence that
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21 supports the importance of positive or negative anticipated forms of emotions (e.g.,
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23 anticipated feelings of pride and guilt) (Harth *et al.*, 2013; Onwezen *et al.*, 2013),
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25 social/subjective norms (Jansson, 2011; Klöckner, 2013; Matthies *et al.*, 2012), and personal
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27 norm (Hunecke *et al.*, 2001; Schwartz, 1977) appears in previous studies.
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32 Despite the importance of the cognitive, affective, and normative processes for the
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34 explication of consumer decision formation (Hunter, 2006; Oliver, 1997), little research has
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36 involved this combined approach for understanding of travelers' pro-environmental decision-
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38 making processes. In addition, little research has utilized the multiple dimensional approach
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40 of the cognitive process or employed the conjoint use of moral and social norms as a
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42 normative process. Moreover, the role of anticipated affects in activating moral norm has
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44 rarely been examined in tourism. In sum, there exists a substantial lack of empirical and
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46 published research that has exploited the distinct role of multiple cognitive factors,
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48 anticipated forms of emotions, and normative factors in building cruise travelers' pro-
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50 environmental intentions within one comprehensive theoretical framework.
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54 Given these research needs, the general aim of the present study was to build a
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56 conceptual framework comprising the cognitive process, affective process, and normative
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4 process in order to offer a clear understanding of travelers' environmentally responsible
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6 decision-making processes while cruising. In particular, this study was designed to test the
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8 possible associations among multi-cognitive dimensions (biospheric value, environmental
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10 concern, awareness of consequences, and ascription of responsibility), anticipated emotions
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12 (positive and negative), and normative factors (social and moral norms), and to examine the
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14 influence of such relationships on cruise customers' decision formation. In addition,
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16 following the associations expected based on the proposed theoretical model and research
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18 outcomes in previous studies, the intricate indirect (mediated) relationships among study
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20 constructs were objected to be tested. Moreover, the comparative importance of the included
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22 constructs was objected to be evaluated.
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28 **Conceptual Background and Hypotheses**

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31 Our conceptual model is exhibited as a graphical picture in Figure 1. Our conceptual
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33 framework is composed of four cognitive factors (i.e., biospheric value, environmental
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35 concern, awareness of consequences, and ascription of responsibility), two affective dimensions
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37 (i.e., positive and negative anticipated emotions), and two normative dimensions (i.e., social
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39 norm and moral norm) as drivers of environmentally responsible intentions.
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42 Overall, the model includes a total of nine study variables and sixteen research hypotheses
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44 linking the constructs.
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53 **Cognitive Dimensions**

54 Biospheric value, environmental concern, awareness of consequences, and ascription of
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3 responsibility have long been believed as activators of moral norm and as cognitive drivers of
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5 environmentally responsible decisions (Han, 2014, 2015; Harland *et al.*, 2007; Steg and De
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7 Groot, 2010). According to De Groot *et al.* (2007), biospheric value indicates one's perception
8
9 of value related to the biosphere and the environment that are central in his/her life.
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11 This biospheric value is one of the major aspects of personal values referring to the criteria that
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13 individuals utilize to choose and justify behaviors and to evaluate the self/others and events
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15 (Schwartz, 1992). This criteria is very general, transcending particular situations, and
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17 it serves as a guide for correct and appropriate behavior (Fornara *et al.*, 2016). Environmental
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19 concern is a global concept that refers to "feelings about many different green issues"
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21 (Zimmer *et al.*, 1994, p. 64). In addition, according to Milfont *et al.* (2010), while awareness
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23 of consequences refers to "people's understanding that their actions might have consequences
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25 for the welfare of others" (p. 124), ascription of responsibility indicates "people's assignment
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27 of responsibility for their actions" (p. 124).
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32 Biospheric value is the main aspect of value orientation, which indicates the guiding
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34 principles essential in individuals' life, particularly with regard to environmental behavior
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36 (Hedlund, 2011; Schwartz, 1992). Environmental concern is the core in forming ecological
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38 worldview (Stern *et al.*, 1999). Thus, biospheric value and environmental concern are also
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40 known as environmental value and ecological worldview, respectively. Moreover, awareness
41
42 of consequences and ascription of responsibility in environmental behavior are
43
44 interchangeably used with the terms as problem awareness and perceived ability to reduce
45
46 threat, respectively (Han, 2015; Stern 2000). Individuals' pro-environmental decision or
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48 behavior is triggered by moral obligation, which in turn is influenced by such specific cognitive
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50 factors as biospheric value (Schwartz, 1992; Stern, 2000), environmental concern (Kim and
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52 Han, 2010; Mostafa, 2006), awareness of consequences (Chan *et al.*, 2014), and ascribed
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54 responsibility (Han, 2014). Accordingly, the importance of these cognitive factors in
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4 pro-environmental behavior has not been overemphasized in the existing literature.
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8 **Positive and Negative Anticipated Emotions** 9

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

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7 **Impact of Cognitive Factors on Affective Factors and Moral Norm**
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10 Such variables as environmental concern, awareness of consequences, biospheric value, and
11 ascription of responsibility are cognitions/perceptions (Schwartz, 1977; Stern, 2000), whereas
12 anticipated emotions are affective factors (Han *et al.*, 2016; Perugini and Bagozzi, 2001). In
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15 addition to affective variables, the factors with cognitive nature influence individuals' moral
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17 obligation to take a pro-environmental action; and both cognitive and affective variables are
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19 significantly interrelated (Han, 2014). In other words, anticipated affective reactions are
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21 derived from one's cognitive/perceptual beliefs or assessments; and such relationships results
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23 in a felt obligation toward an environmentally responsible action (Bamberg and Möser, 2007;
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25 Han, 2014; Onwezen *et al.*, 2013). According to these researchers, anticipated emotions form
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27 based on the outcomes of cognitive process in that cognitive factors often strengthen affective
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29 responses in a pro-environmental context. These cognitive variables (e.g., problem awareness,
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31 ascribed responsibility, biospheric/environmental value, ecological concern) also significantly
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33 contribute to increasing personal norm in the formation of pro-social or pro-environmental
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35 decision (Han *et al.*, 2016; Schwartz, 1977; Steg and Vlek, 2009; Stern *et al.*, 1999, Stern,
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37 2000).
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45 H1: Cruise travelers' biospheric values have a positive and significant impact on their
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47 positive anticipated emotions.
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49 H2: Cruise travelers' environmental concern has a positive and significant impact
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51 on their positive anticipated emotions.
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53 H3: Cruise travelers' awareness of consequences has a positive and significant
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3 impact on their positive anticipated emotions.
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5 H4: Cruise travelers' ascription of responsibility has a positive and significant impact
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7 on their positive anticipated emotions.
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10 H5: Cruise travelers' biospheric values have a negative and significant impact on
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12 their negative anticipated emotion.
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14 H6: Cruise travelers' environmental concern has a negative and significant impact on
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16 their negative anticipated emotions.
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18 H7: Cruise travelers' awareness of consequences has a negative and significant
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20 impact on their negative anticipated emotions.
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23 H8: Cruise travelers' ascription of responsibility has a negative and significant
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25 impact on their negative anticipated emotions.
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27 H9: Cruise travelers' biospheric values have a positive and significant impact on their
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29 moral norm.
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32 H10: Cruise travelers' environmental concern has a positive and significant impact
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34 on their moral norm.
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36 H11: Cruise travelers' awareness of consequences has a positive and significant
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38 impact on their moral norm.
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40 H12: Cruise travelers' ascription of responsibility has a positive and significant
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42 impact on their moral norm.
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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.

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5 **Relationship Between Social and Moral Norms**
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7 Although the results of extant studies on environmental behavior are not always consistent, the
8 concept of social norm is widely regarded to be a decisive factor of moral norm and pro-
9 environmental intention or behavior (Bamberg and Möser, 2007; Han, 2014, 2015; Hunecke *et*
10 *al.*, 2001; Klöckner, 2013). Since social norm delivers the behavioral standards that a salient
11 social reference group considers as proper in a particular context, one's moral norm is
12 believed to be developed based on social norm (Fornara *et al.*, 2016). Social norm has been
13 proven to exert a significant influence on one's feeling of moral obligation for an
14 environmentally responsible action in diverse contexts (littering, recycling, energy saving,
15 etc.) (Carrus *et al.*, 2009; Ferguson *et al.*, 2011; Fornara *et al.*, 2011). An impact of social
16 norm on the activation of moral norm has been embedded in diverse frameworks explicating
17 pro-social or pro-environmental behaviors (Hunecke *et al.*, 2001; Han, 2015). These studies
18 demonstrated that social norm acts as an intensifier of moral norm.
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34 H15: Cruise travelers' social norm has a positive and significant impact on their
35 moral norm.
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40 **Relationship Between Moral Norm and Environmentally Responsible Intentions**
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42 Researchers agree that this moral norm is the most proximal antecedent of pro-environmental
43 intention or behavior (Choi *et al.*, 2015; Fornara *et al.*, 2016; Fransson and Biel, 1997;
44 Schwartz and Bardi, 2001; Stern, 2000). According to Fransson and Biel's (1977) early
45 indication, one's moral norm is associated with his/her personal belief about what is the
46 right thing to do for his/her positive self-evaluation; and this morality affects pro-social
47 decision/behavior. In their recent study about anticipating intention for the improvement of
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2 household energy efficiency, Fornara *et al.* (2016) empirically demonstrated that
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4 homeowners' moral obligations are an important direct trigger of their intention to use
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6 renewable energy. Individuals often engage in a specific pro-environmental behavior since
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8 they feel moral obligation to act properly when they have a feeling of responsibility for the
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10 harmful consequences of their behaviors on the natural environment (Schwartz and Bardi,
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12 2001; Stern, 2000).
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16 H16: Cruise travelers' moral norm has a positive and significant impact on their
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18 environmentally responsible intentions.
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20 21 **Methodology**

22 23 **Questionnaire Development and Measurement**

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25 The survey questionnaire including an introductory letter, measures for study variables, and
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27 queries for demographic information was developed. The initial version of our questionnaire
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29 was pre-tested with graduate students whose major is hospitality and tourism and with cruise
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31 trip experience within the last three years. After a slight improvement was made based on the
32
33 pre-test result, the questionnaire was subjected to an expert-review process. Industry and
34
35 academic cruise experts thoroughly reviewed the questionnaire. The final version of the
36
37 survey questionnaire was developed after these experts' minor corrections. All measures
38
39 used in this study are exhibited in the Appendix. Multiple-item measures and a seven-point
40
41 scale were employed for all variables within the research model. The details are as follows:
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43 Biospheric value included four items adapted from Jakovcevic and Steg (2013) and Stern
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45 *et al.* (1999). Environmental concern was measured using three items employed from
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47 Cordano *et al.* (2011) and Stern *et al.* (1999). Awareness of consequences contained four
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49 items adapted from Bamberg and Schmidt (2003) and Han *et al.* (2016).
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1 Ascribed responsibility was assessed with three items employed from Onwezen *et al.*
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4 (2013) and Van Riper and Kyle (2014). Positive anticipated emotion was evaluated with
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6 four items adapted from Onwezen *et al.* (2013) and Perugini and Bagozzi (2001). Negative
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8 anticipated emotion was evaluated using four items employed from Onwezen *et al.* (2013)
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10 and Perugini and Bagozzi (2001). Social norm included three items adapted from Ajzen
11
12 (1991) and Han (2014). Moral norm was measured with four items employed from Onwezen
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14 *et al.* (2013) and Van Riper and Kyle (2014). Environmentally responsible intentions
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16 contained three items adapted from Minton and Rose (1997) and Stern *et al.* (1999).
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20 **Data Collection and Sample Characteristics**

21 We tested our theoretical model with the data collected from a Web-based survey method.
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24 Using the survey system and database of an online market research company, an e-mail
25 invitation of the survey was sent to general US cruise passengers. Only passengers who had
26 taken a cruise within the last year were invited to participate in the survey and complete the
27 questionnaire. Survey instructions and description of the research were given to all
28 participants in the initial stage of the survey when they clicked the survey link. The data for this research
29 was collected through this process. As a result, a total of 307 completed
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31 responses were obtained. After the elimination of multivariate outliers using a Mahalanobis distance
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33 check and unusable cases, a total of 302 responses were ultimately retained for the further analysis.
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4 Among the participants in the usable sample (n = 302), 39.7% were male cruise
5 travelers; and 60.3% were female cruise travelers. All of them indicated that their most recent
6 cruise trip was within the past 12 months, a requisite of survey participation. Specifically,
7 5.6% of the respondents indicated that they traveled on a cruise within the last month; 29.8%
8 reported within the past three months; 59.3% indicated within the last six months; and 84.8%
9 reported within the past nine months in a cumulative manner. Regarding the frequency of
10 cruise product use for the past five years, 36.5% indicated that they had taken a cruise
11 vacation twice, followed by once (26.9%), three times (17.9%), four times (8.0%), five times
12 (3.7%), and six times or more (7.0%). The majority of the participants' age category was 25 –
13 44 years old (43.4%), followed by 45 – 64 years (34.4%), 24 years or younger (9.3%), and 65
14 years or older (12.9%). In terms of participants' income level, the highest category was over
15 \$100,000 (23.2%), closely followed by an income between \$55,000 and \$69,999 (21.2%).
16 Most participants reported their ethnic background as Caucasian/White (74.5%). Lastly, in
17 terms of education level, a majority of the respondents possessed a bachelor's degree (41.7%)
18 or graduate degree (15.6%).
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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

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4 were all greater than these correlations. Discriminant validity was accordingly supported.
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6 The χ^2/df value of 2.382 in the measurement model falls within an acceptable range
7 of 2 – 5 (Marsh and Hocevar, 1998), and other practical fit indices were adequate. The
8 reliability values were well above .600 as suggested by Hair et al. (2010). All standardized
9 factor loadings were significant ($p < .01$). This indicated the convergence of the indicators
10 (observed variables) with their associated underlying factors (Anderson and Gerbing, 1988).
11 This result with the appropriate fit of the measurement model provided empirical evidence of
12 unidimensionality, demonstrating the presence of a single strait underlying each set of
13 measurement items (Hattie, 1985).
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30 **Structural Equation Modeling**

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32 A structural model was produced. Findings of the structural equation modeling (SEM) with
33 the maximum likelihood estimation method revealed that the proposed structural model
34 included an acceptable level of fit to the data ($\chi^2 = 1039.352$, $df = 407$, $p < .001$, $\chi^2/df = 2.554$,
35 RMSEA = .072, CFI = .928, IFI = .929, TLI = .918). After preliminary data analysis, two
36 new paths were added by taking the modification indices into account, which were wholly
37 justifiable for literature-based theoretical reasons. The goodness-of-fit of this revised model
38 was satisfactory ($\chi^2 = 1024.416$, $df = 405$, $p < .001$, $\chi^2/df = 2.529$, RMSEA = .071, CFI = .930,
39 IFI = .930, TLI = .919). The insertion of the paths strengthened the general model fit and fit
40 indices ($\Delta\chi^2 = 14.936$, $df = 2$, $p < .01$). The details about the results of this final model
41 predicting cruise travelers' environmentally responsible intentions are shown in Figure 2
42 and Table 2.
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(Insert Figure 2)

(Insert 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 ($\beta = .279, p < .01$), environmental concern ($\beta = .180, p < .01$), and awareness of consequences ($\beta = .272, p < .01$), thus supporting hypotheses 1, 2, and 3. Yet, the impact of ascribed responsibility on positive anticipated emotion ($\beta = .031, p > .05$) 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 ($\beta = -.195, p < .05$) and ascribed responsibility ($\beta = -.293, p < .01$) exerted a significant influence on negative anticipated emotion. Hence, hypotheses 6 and 8 were supported. However, the influence of biospheric value ($\beta = -.113, p > .05$) and awareness of consequences ($\beta = -.070, p > .05$) 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 ($\beta = .096, p < .01$), environmental concern ($\beta = .328, p < .01$), awareness of consequences ($\beta = .300, p < .01$), and ascribed responsibility ($\beta = .122, p < .01$) have a positive and significant influence on

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4 moral norm. These results supported hypotheses 9, 10, 11, and 12.
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6 The impact of anticipated emotions was assessed (H13 – H14). It was found that
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8 while positive anticipated emotion is significantly associated with moral norm ($\beta = .106$, p
9 $< .01$), negative anticipated emotion was not significantly related to moral norm ($\beta = .040$,
10 $p > .05$). Thus, hypothesis 13 was supported, but hypothesis 14 was not supported.
11
12 Regarding the social norm and moral norm relationship (H15), moral norm was found to be
13 a significant function of social norm ($\beta = .253$, $p < .01$). Thus, hypothesis 15 was supported.
14
15 The hypothesized influence of moral norm on environmentally responsible intentions was
16 tested (H16). The direct link was found to be significant ($\beta = .706$, $p < .01$), supporting
17 hypothesis 16. The two added paths from negative anticipated emotion ($\beta = -.107$, $p < .01$)
18 and social norm ($\beta = .197$, $p < .01$) to intentions were also significant.
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28 The indirect influence of research variables on pro-environmental intentions was
29 examined. Our results showed that social norm significantly influenced intentions indirectly
30 through moral norm ($\beta_{SN-MN-ERI} = .179$, $p < .01$). Thus, moral norm played a significant
31 mediating role in this relationship. In addition, our findings showed that biospheric value (β
32 $BV-PAE \ \& \ NAE-MN-ERI = .097$, $p < .05$), environmental concern ($\beta_{EC-PAE \ \& \ NAE- \ MN-ERI} = .261$, p
33 $< .01$), and awareness of consequences ($\beta_{AC-PAE \ \& \ NAE-MN-ERI} = .237$, $p < .01$)
34 significantly influenced pro-environmental intentions via anticipated emotions and moral
35 norm. These results supported a significant mediating role of both anticipated emotions and
36 moral norm in these relationships. Lastly, regarding the total impact of study constructs, as
37 reported in Table 2, the moral norm included the greatest influence on intentions ($\beta = .706$,
38 $p < .01$), followed by social norm ($\beta = .376$, $p < .01$).
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55 **Discussion**

56 **Summary of the Research**

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3 The present study provides a deeper understanding of individuals' decision-making process
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5 for cruise traveling in an environmentally responsible way. Specifically, this study identified the
6
7 possible distinctive role of variables within cognitive, affective, and normative processes in
8
9 triggering cruise travelers' environmentally responsible intentions. In addition, the present
10
11 study tested the interrelationships among constructs within such processes. The proposed
12
13 theoretical framework was significantly improved by integrating additional paths. The
14
15 associations within the improved model were generally supported. The model explained a
16
17 satisfactory amount of total variance to explain why individuals intend to
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19 engage in environmentally responsible cruise traveling accepting some possible
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21 inconveniences.
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26 **Relative Importance of Moral Norm**

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28 Moral norm emerged as the most influential predictor of individuals' environmentally
29
30 responsible intentions while cruise traveling. This finding supported the notion that one who
31
32 perceives a moral imperative to behave in an eco-friendly way feels morally obliged to act in
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34 a consistent manner (Fornara *et al.*, 2016; Van der Werff *et al.*, 2013).
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37 Regarding the triggers of moral norm within our conceptual framework, it appeared that
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4 cognitive factors such as biospheric value, environmental concern, awareness of
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6 consequences, and ascribed responsibility along with positive anticipated emotion and social
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8 norm significantly increase cruise travelers' sense of moral obligation for pro-environmental
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10 behavior.

11
12 social variables. For instance, by using diverse channels/methods, helping current and
13
14 potential cruise customers (1) know that protecting the environment or respecting the Earth is
15
16 valuable, (2) understand that mankind is severely abusing the natural environment and
17
18 resources, (3) be aware that the tourism industry, including cruises, generates huge impacts
19
20 on the environment causing environmental deterioration, (4) know that every traveler is
21
22 jointly responsible for such environmental harm, (5) know that traveling in a sustainable way
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24 generates feelings of pride, and (6) recognize that most people in society definitely want
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26 travelers to protect the environment can be an efficient way to increase their moral obligation,
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28 which in turn significantly boosts their willingness to practice environmentally responsible
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30 actions while traveling on a cruise.
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37 **Impact of Anticipated Emotions**

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39 Concerning the role of anticipated emotions, the direct connection between positive
40
41 anticipated emotion and moral norm was revealed. In contrast, there was no direct
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43 relationship between negative anticipated emotion and moral norm. The direct connection
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45 from this negative anticipated emotion to environmentally responsible intention was
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47 nevertheless significant. This result is partially in accordance with previous research that
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49 identified the direct relationship between anticipated emotions and moral/personal norm in
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3 explaining environmental behavior (Bamberg *et al.*, 2007; Han, 2014; Onwezen *et al.*, 2013).

4
5 Enriching our knowledge regarding the role of anticipated emotions, our findings informed
6
7 that cruise passengers' positive predicted form of emotions contributes to activating their
8
9 moral norm by directly eliciting their moral obligation to behave pro-environmentally while
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11 traveling, whereas their negative anticipated emotions directly triggers passengers'
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13 environmentally responsible decisions without a connection with moral norm.
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16 17 18 19 **Mediating Effect of Variables**

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21 Moral norm and anticipated emotions appeared as important mediators in the proposed
22
23 theoretical framework. In particular, moral norm significantly mediated the impact of social
24
25 norm on environmentally responsible intentions; and both anticipated emotions and moral
26
27 norm together significantly mediated the influence of biospheric value, environmental
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29 concern, and awareness of consequences on intentions. This finding is in line with previous
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31 studies that stressed the important mediating impact of moral norm or anticipated emotions
32
33 (Han, 2014; Hunecke *et al.*, 2001; Klöckner, 2013; Steg and De Groot, 2010; Zhang *et al.*,
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35 2013). While being aware of the mediating characteristics of these constructs, researchers
36
37 need to carefully exploit them when building a conceptual framework for the elucidation of
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39 customers' pro-environmental decision formation and behavior.
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45 46 **Impact of Social Norm**

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48 Concerning the hypothesized role of social norm, it appeared that social norm significantly
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50 increases moral norm, which in turn enhances environmentally responsible intentions via
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4 moral norm. Some research in the existing literature has asserted the conjoint use of social
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6 norm and moral norm as a normative process for the explication of environmental decision-
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8 making and behavior (Bamberg *et al.*, 2007; López-Mosquera and Sánchez, 2012).
9
10 Consistently, the present study addressed the importance of social norm in making cruise
11
12 travelers feel morally obliged to behave ecologically, directly influencing their willingness
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14 for environmentally responsible actions while cruising. Results of this study substantially
15
16 supported the theoretical models in the extant literature framed on both pro-
17
18 social/environmental and self-interest motives (e.g., Bamberg and Möser, 2007; Fornara *et al.*,
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20 2016; Han, 2015; Hunecke *et al.*, 2001).
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26 **Importance of the Cognition – Affect Relationship**

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28 Regarding the proposed impact of cognitive factors on affective dimensions, the relationships
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30 were partially supported. In particular, it was revealed that the presence of cruise customers’
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32 biospheric value, concern for the environment, and problem awareness evokes their positive
33
34 anticipated feelings for sustainable actions while cruising; the presence of their ecological
35
36 concern and ascribed responsibility for the existing environmental problems forms their
37
38 unfavorable anticipated feelings for environmentally irresponsible behaviors while traveling
39
40 on a cruise. This result is consistent with existing studies that emphasized the pivotal role of
41
42 the cognition – affect relationship in individuals’ decision-making processes not only in
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44 consumer behavior (Hunter, 2006; Oliver, 1997, 1999) but also in environmental behavior
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46 (Bamberg and Möser, 2007; Onwezen *et al.*, 2013). Overall, our finding demonstrated the
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48 necessity of involving the combination of cognitive and affective processes into the
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50 theoretical framework of cruise travelers’ eco-friendly decision-making processes.
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56 **Limitations**

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3 The present research was not free from limitations. First, like other socio-psychological
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5 studies/theories relating to individuals' decision-making processes (e.g., Ajzen, 1991; Ajzen
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7 and Fishbein, 1980; Perugini and Bagozzi, 2001; Schwartz, 1977), this research investigates
8
9 travelers' general decision formation. Future research should focus either on repeat purchase
10
11 or pre-purchase decision-making processes to better assess environmentally responsible
12
13 behavior. Second, survey respondents were from various regions across the US. Do cross-
14
15 national differences exist? Additional research is necessary to determine whether or not the
16
17 study results can be generalized to different nations. Third, while all pre-test participants were
18
19 knowledgeable academics, general/actual cruise customers were not part of the pre-test
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21 process. Future research should include pre-test participants who more accurately represent
22
23 the average US cruise traveler.
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30 **Conclusion**

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32 The present study considerably adds to our comprehension of travelers' environmentally
33
34 responsible decision-making processes in the cruise sector by putting cognitive factors,
35
36 affective drivers, and normative factors together into one comprehensive theoretical framework.
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38 That is, this study effectively utilized the imperative drivers of pro-environmental
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40 behaviors and successfully examined the intricate relationships among them for better
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42 understanding of passengers' willingness to behave pro-environmentally while cruise
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44 traveling. Previous studies involved one of the affective-centered, cognitive-focused, or
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46 normative-centered views to explicate pro-environmental decision/behavior. The present
47
48 research provides empirical evidence that considering such views simultaneously is even more
49
50 capable of explaining the customer decision-making process. This research was the first
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52 to employ such integrative views in the cruise context. This research thus includes strong
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54 meanings in theory and practice in the cruise industry.
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7 **Appendix**

8 Biospheric value

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

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

11 Preventing pollution

12 Respecting the Earth

13 Unity with nature

14 Protecting the environment

16 Environmental concern

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

18 The balance of nature is very delicate and easily upset.

19 Humans are severely abusing the environment.

20 The Earth is like a spaceship with limited room and resources.

22 Awareness of Consequences

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

24 The cruise industry can cause ocean pollution, climate change, and exhaustion of natural
25 resources.

26
27 Cruise tourism can possibly generate huge environmental impact on the ocean and the wider
28 environment.

29 The cruise industry can cause environmental deterioration (e.g., waste from rooms, dining,
30 and other ship facilities, excessive use of energy/water/fuel).

32 Ascription of responsibility

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

34 I believe that every cruise traveler is partly responsible for the environmental problem
35 caused by the cruise industry.

36 I feel that every cruise traveler is jointly responsible for the environmental deterioration
37 caused by cruise trips.

38 Every cruise traveler must take responsibility for the environmental problems caused by
39 cruise trips.

42 Positive anticipated emotion

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

45 *Not at all (1) – Very much (7)*

46 I feel proud.

47 I feel accomplished.

48 I feel confident.

49 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

Ahmad, M., 2014. Green ships fuelled by LNG: Stimulus for Indian coastal shipping. *India Quarterly* 70(2): 105-122.

Ajzen, I., 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50(2): 179–211.

Ajzen, I., Fishbein, M., 1980. *Understanding Attitude and Predicting Social Behavior*. Prentice-Hall: Englewood Cliffs, NJ.

Anderson, J.C., Gerbing, D.W., 1988. Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin* 103(3): 411-423.

- 1
2
3
4 Bagozzi, R.P., Dholakia, U.M., Basuroy, S., 2003. How effortful decisions get enacted: The
5 motivating role of decision processes, desires, and anticipated emotions. *Journal of*
6 *Behavioral Decision Making* 16: 273-295.
7
8 Bamberg, S., Möser, G., 2007. Twenty years after Hines, Hungerford, and Tomera: A new
9 meta-analysis of psycho-social determinants of pro-environmental behavior. *Journal*
10 *of Environmental Psychology* 27: 14–25.
11
12 Bamberg, S., Schmidt, P., 2003. Incentives, morality or habit? Predicting students' car use
13 for university routes with the models of Ajzen, Schwartz, and Triandis. *Environment*
14 *and Behavior* 35: 264–285.
15
16 Bamberg, S., Hunecke, M., Blobaum, A., 2007. Social context, personal norms and the use
17 of public transportation: Two field studies. *Journal of Environmental Psychology*
18 27: 190–203.
19
20 Carrus, G., Bonnes, M., Fornara, F., Passafaro, P., Tronu, G., 2009. Planned behavior and
21 local norms: An analysis of the space-based aspects of normative ecological
22 behavior. *Cognitive Processing* 10: 198-200.
23
24 Carrus, G., Passafaro, P., Bonnes, M., 2008. Emotions, habits and rational choices in
25 ecological behaviours: The case of recycling and use of public transportation.
26 *Journal of Environmental Psychology* 28: 51-62.
27
28 Chan, E.S.W., Hsu, C.H.C., 2016. Environmental management research in hospitality.
29 *International Journal of Contemporary Hospitality Management* 28(5): 886-923.
30
31 Chan, E.S.W., Hon, A.H.Y., Chan, W., Okumus, F., 2014. What drives employees' intentions to
32 implement green practices in hotels? The role of knowledge, awareness, concern and
33 ecological behavior. *International Journal of Hospitality Management* 40: 20-28.
34
35 Chan, W.W., Ho, K., 2006. Hotels' environmental management systems (ISO 14001):
36 creative financing strategy. *International Journal of Contemporary Hospitality*
37 *Management* 18(4): 302-316.
38
39 Chen, M., Tung, P., 2014. Developing an extended theory of planned behavior model to
40 predict consumers' intention to visit green hotels. *International Journal of*
41 *Hospitality Management* 36: 221-230.
42
43 Choi, H., Jang, J., Kandampully, J., 2015. Application of the extended VBN theory to
44 understand consumers' decisions about green hotels. *International Journal of*
45 *Hospitality Management* 51: 87-95.
46
47 Cordano, M., Welcomer, S., Scherer, R., Parada, V., 2011. Understanding cultural
48 differences in the antecedents of pro-environmental behavior: A comparative
49 analysis of business student in the United States and Chile. *Journal of*
50 *Environmental Education* 41: 224-238.
51
52 De Groot, J.I.M., Steg, L., 2008. Value orientations to explain beliefs related to
53 environmental significant behavior: How to measure egoistic, altruistic, and
54 biospheric value orientations. *Environment and Behavior* 40: 330-354.
55
56 De Groot, J.I.M., Steg, L., Dicke, M., 2007. Morality and reducing car use: Testing the norm
57
58
59
60

1
2
3 activation model of prosocial behavior. In Columbus, F. (Ed.), Transportation
4 research trends. NOVA Publishers.
5

6 Ferguson, M.A., Branscombe, N.R., Reynolds, K.J., 2011. The effect of intergroup
7 comparison on willingness to perform sustainable behavior. *Journal of*
8 *Environmental Psychology* 31: 275-281.
9

10 Fornara, F., Carrus, G., Passafaro, P., Bonnes, M., 2011. Distinguishing the sources of
11 normative influence on pro-environmental behaviors: The role of local norms in
12 household waste recycling. *Group Processes and Intergroup Relations* 14: 623-635.
13

14 Fornara, F., Pattitoni, P., Mura, M., Strazzera, E., 2016. Predicting intention to improve
15 household energy efficiency: The role of value-belief-norm theory, normative and
16 informational influence, and specific attitude. *Journal of Environmental Psychology*
17 45: 1-10.
18

19
20 Fransson, N., Biel, A., 1997. Morality and norm violation. *Göteborg Psychological Reports*
21 27(3): 1-10.
22

23 Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., 2010. *Multivariate Data Analysis* (7th
24 ed.). Prentice-Hall: Upper Saddle River.
25

26 Han, H., 2014. The norm activation model and theory-broadening: Individuals' decision-
27 making on environmentally-responsible convention attendance. *Journal of*
28 *Environmental Psychology* 40: 462-471.
29

30 Han, H., 2015. Travelers' pro-environmental behavior in a green lodging context:
31 Converging value-belief-norm theory and the theory of planned behavior. *Tourism*
32 *Management* 47: 164-177.
33

34
35 Han, H., Hsu, L., Sheu, C., 2010. Application of the theory of planned behavior to green
36 hotel choice: Testing the effect of environmentally friendly activities. *Tourism*
37 *Management* 31: 325-334.
38

39
40 Han, H., Lee, M.J., Hwang, J., 2016. Cruise travelers' environmentally responsible decision-
41 making: An integrative framework of goal-directed behavior and norm activation
42 process. *International Journal of Hospitality Management* 53: 94-105.
43

44
45 Harland, P., Staats, H., Wilke, H.A.M., 2007. Situational and personality factors as direct or
46 personal norm mediated predictors of pro-environmental behavior: Questions derived
47 from norm-activation theory. *Basic and Applied Social Psychology* 29(4): 323-334.
48

49 Harth, N.S., Leach, C.W., Kessler, T., 2013. Guilt, anger, and pride about in-group
50 environmental behavior: Different emotions predict distinct intentions. *Journal of*
51 *Environmental Psychology* 34: 18-26.
52
53
54
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58
59
60

- 1
2
3
4 Hattie, J., 1985. Methodology review: Assessing unidimensionality of tests and items.
5 *Applied Psychological Measurement* 9: 139-164.
6
- 7 Hedlund, T., 2011. The impact of values, environmental concern, and willingness to accept
8 economic sacrifices to protect the environment on tourists' intentions to buy
9 ecologically sustainable tourism alternatives. *Tourism and Hospitality Research*
10 11(4): 278-288.
11
- 12 Hsieh, Y-C., 2012. Hotel companies' environmental policies and practices: A content
13 analysis of their web pages. *International Journal of Contemporary Hospitality*
14 *Management* 24(1): 97-121.
15
- 16 Hunecke, M., Blöbaum, A., Matthies, E., Höger, R., 2001. Responsibility and environment:
17 Ecological norm orientation and external factors in the domain of travel mode
18 choice behavior. *Environment and Behavior* 33: 830-852.
19
- 20 Hunter, G.L., 2006. The role of anticipated emotion, desire, and intention in the relationship
21 between image and shopping center visits, *International Journal of Retail and*
22 *Distribution Management* 34(10): 709-721.
23
24
- 25 Jakovcevic, A., Steg, L., 2013. Sustainable transportation in Argentina: Values, beliefs, norms
26 and car use reduction. *Transportation Research Part F* 20: 70-79.
27
- 28 Jansson J, 2011. Consumer eco-innovation adoption: Assessing attitudinal factors and
29 perceived product characteristics. 20: 192-210.
30
- 31 Kaldy, J., 2011. Using a macroalgal N bioassay to detect cruise ship waste water effluent
32 inputs. *Marin pollution Bulletin* 62: 1762 -1771.
33
- 34 Kim, Y., Han, H., 2010. Intention to pay conventional-hotel prices at a green hotel – a
35 modification of the theory of planned behavior. *Journal of Sustainable Tourism*
36 18(8): 997-1014.
37
- 38 Kim, Y., Njite, D., Hancer, M., 2013. Anticipated emotion in consumers' intentions to
39 select eco-friendly restaurants: Augmenting the theory of planned behavior",
40 *International Journal of Hospitality Management* 34: 255–262.
41
- 42 Klein, R.A., 2011. Responsible cruise tourism: Issues of cruise tourism and sustainability.
43 *Journal of Hospitality and Tourism Management* 18: 107-116.
44
- 45 Klöckner, C.A., 2013. A comprehensive model of the psychology of environmental behavior
46 – A meta-analysis. *Global Environmental Change* 23: 1028-1038.
47
- 48 Klöckner, C.A., Matthies, E., 2004. How habits interfere with norm directed behavior – A
49 normative decision-making model for travel mode choice. *Journal of Environmental*
50 *Psychology* 24: 319–327.
51
- 52 Laroche, M., Bergeron, J., Barbaro-Forleo, G., 2001. Targeting consumers who are wiling
53 to pay more for environmentally friendly products. *Journal of Consumer Marketing*
54 18(6): 503–520.
55
- 56 Lee, J., Hsu, L., Han, H., Kim, Y., 2010. Understanding how consumers view green hotels:
57 How a hotel's green image can influence behavioral intentions. *Journal of Sustainable*
58
59
60

- 1
2
3 *Tourism* 18(7): 90-914.
4
5 Lerner, J.S., Keltner, D., 2000. Fear, anger, and risk. *Journal of Personality and Social*
6 *Psychology* 81(1): 146-159.
7
8 Lewis, M.A., 1993. Self-conscious emotions: Embarrassment, pride, shame, and guilt. In
9 Haviland, M.L.J.M. (Ed.), *Handbook of Emotions*, The Guilford Press: New York, NY.
10
11 Lin, H-Y., Hsu, M-H., 2015. Using social cognitive theory to investigate green consumer
12 behavior. *24*: 326-343.
13
14 López-Mosquera, N., Sánchez, M., 2012. Theory of planned behavior and the value-belief-
15 norm theory explaining willingness to pay for a suburban park. *Journal of*
16 *Environmental Management* 113: 251-262.
17
18 Marsh, H.W., Hocevar, D., 1988. A new, more powerful approach to multitrait-
19 multimethod analyses: Application of second-order confirmatory factor analysis.
20 *Journal of Applied Psychology*, 73: 107-117.
21
22 Matthies, E., Selge, S., Klöckner, C.A., 2012. The role of parental behavior for the
23 development of behaviour specific environmental norms – The example of recycling
24 and re-use behavior. *Journal of Environmental Psychology* 32: 277-282.
25
26 Milfont. T.L., Sibley, C.G., Duckitt, J., 2010. Testing the moderating role of the
27 components of norm activation on the relationship between values and
28 environmental behavior. *Journal of Cross-Cultural Psychology* 41: 124-131.
29
30 Minton, A.P., Rose, R.L., 1997. The effects of environmental concern on environmentally
31 friendly consumer behavior: An exploratory study. *Journal of Business*
32 *Research* 40(1): 37-48.
33
34 Mostafa, M., 2009. Shades of green: A psychographic segmentation of the green consumer
35 in Kuwait using self-organizing maps. *Expert Systems with Applications* 36: 11030-
36 11038.
37
38 Mustonen N, Karjaluoto H, Jayawardhena C, 2016. Customer environmental values and
39 their contribution to loyalty in industrial markets. *25*: 512-528.
40
41 Oliver, R.L., 1997. *Satisfaction: A Behavioral Perspective on the Consumer*. McGraw-Hill:
42 New York, NY.
43
44 Oliver, R.L., 1999. Whence consumer loyalty?., *Journal of Marketing* 63: 33-44.
45
46 Onwezen, M.C., Antonides, G., Bartels, J., 2013. The norm activation model: An exploration of
47 the functions of anticipated pride and guilt in pro-environmental behavior. *Journal*
48
49
50
51
52
53
54
55
56
57
58
59
60

- 1
2
3
4 *of Economic Psychology* 39: 141–153.
- 5
6 Ozaki, R., 2011. Adopting sustainable innovation: What makes consumers sign up to green
7 electricity? *20*: 1-17.
- 8
9 Perugini, M., Bagozzi, R.P., 2001. The role of desires and anticipated emotions in goal-
10 directed behaviors: Broadening and deepening the theory of planned behavior.
11 *British Journal of Social Psychology* 40: 79–98.
- 12
13 Schultz, P.W., Khazian, A.M., Zaleski, A.C., 2008. Using normative social influence to
14 promote conservation among hotel guests. *Social Influence* 3(1): 4-23.
- 15
16 Schwartz, S.H., 1977. Normative influence on altruism. In Berkowitz, L. (Ed.), *Advances*
17 *in Experimental Social Psychology* 10, Academic Press: New York, NY: 221-279.
- 18
19 Schwartz, S.H., 1992. Universals in the content and structure of values: Theoretical
20 advances and empirical tests in 20 countries. *Advances in Experimental Social*
21 *Psychology* 25: 1-65.
- 22
23 Schwartz, S.H., Bardi, A., 2001. Value hierarchies across cultures: Taking a similarities
24 perspective. *Journal of Cross-Cultural Psychology* 32: 268-290.
- 25
26 Schwartz, S.H., Howard, J.A., 1981. A normative decision making model of altruism. In
27 Rushton, J.P., Sorrentino, R.M. (Eds), *Altruism and Helping Behavior*, Lawrence
28 Erlbaum: Hillsdale, NJ: 89-211
- 29
30 Steg, L., De Groot, J.I.M., 2010. Explaining prosocial intentions: Testing causal relationships
31 in the norm activation model. *British Journal of Social Psychology* 49: 725-743.
- 32
33 Steg, L., Vlek, C., 2009. Encouraging pro-environmental behavior: An integrative review and
34 research agenda. *Journal of Environmental Psychology* 29: 309-317.
- 35
36 Steg, L., De Groot, J.I.M., Dreijerink, L., Abrahamse, W., Siero, F., 2011. General antecedents
37 of personal norms, policy acceptability, and intentions: The role of values, worldviews,
38 and environmental concern. *Society and Natural Resources* 24: 349-367.
- 39
40 Stern, P.C., 2000. Toward a coherent theory of environmentally significant behavior.
41 *Journal of Social Issues* 56(3): 407-424.
- 42
43 Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., Kalof, L., 1999. A value-belief-norm
44 theory of support for social movements: The case of environmentalism. *Research in*
45 *Human Ecology* 6(2): 81–97.
- 46
47 Stern, P.C., Dietz, T., Kalof, L., Guagnano, G.A., 1995. Values, beliefs, and pro-
48 environmental action: Attitude formation toward emergent attitude objects. *Journal*
49 *of Applied Social Psychology* 25: 1611-1636.
- 50
51 Thøgersen, J., 2006. Norms of environmentally responsible behavior: An extended taxonomy.
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Journal of Environmental Psychology 26: 247-261.

Thøgersen, J., 2009. The motivational roots of norms for environmentally responsible behavior. *Basic and Applied Social Psychology* 31(4): 348-362.

Tracy, J.L., Robins, R.W., 2007. The psychology structure of pride: A tale of two facets. *Journal of Personality and Social Psychology* 92: 506-525.

Van der Werff, E., Steg, L., Keizer, K.E., 2013. It is a moral issue: The relationship between environmental self-identity, obligation-based intrinsic motivation and pro-environmental behavior. *Global Environmental Change* 23: 1258-1265.

Van Riper, C.J., Kyle, G.T., 2014. Understanding the internal processes of behavioral engagement in a national park: A latent path analysis of the value-belief-norm theory. *Journal of Environmental Psychology* 38: 288-297.

Zhang, Y., Wang, Z., Zhou, G., 2013. Antecedents of employee electricity saving behavior in organizations: An empirical study based on norm activation model. *Energy Policy* 62: 1120-1127.

Zimmer, M.R., Stafford, T.F., Stafford, M.R., 1994. Green issues: Dimensions of environmental concern. *Journal of Business Research* 30(1): 63-74.

TABLE 1. THE MEASUREMENT MODEL RESULTS

	BV	EC	AC	AR	PAE	NAE	SN	MN	ERI
Biospheric value	1.000								
Environmental concern	.431 (.186)	1.000							
Awareness of consequences	.449 (.202)	.357 (.127)	1.000						
Ascription of responsibility	.364 (.132)	.268 (.072)	.525 (.276)	1.000					
Positive anticipated emotions	.489 (.239)	.342 (.117)	.472 (.223)	.332 (.110)	1.000				
Negative anticipated emotions	-.103 (.011)	-.158 (.025)	-.040 (.002)	-.137 (.019)	-.219 (.048)	1.000			
Social norm	.518 (.268)	.413 (.171)	.464 (.215)	.507 (.257)	.487 (.237)	-.181 (.033)	1.000		
Moral norm	.585 (.342)	.568 (.323)	.679 (.461)	.569 (.324)	.564 (.318)	-.016 (.001)	.687 (.472)	1.000	
Environmentally Responsible Intentions	.560 (.314)	.590 (.348)	.612 (.375)	.454 (.206)	.550 (.303)	-.092 (.008)	.675 (.456)	.795 (.632)	1.000
Mean	5.940	5.818	5.599	4.919	5.509	2.256	4.942	5.559	5.753
SD	.908	.942	1.026	1.494	1.093	1.487	1.428	1.148	1.153
CR	.886	.786	.889	.934	.933	.941	.939	.907	.951
AVE	.662	.563	.670	.877	.776	.800	.837	.710	.865

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.

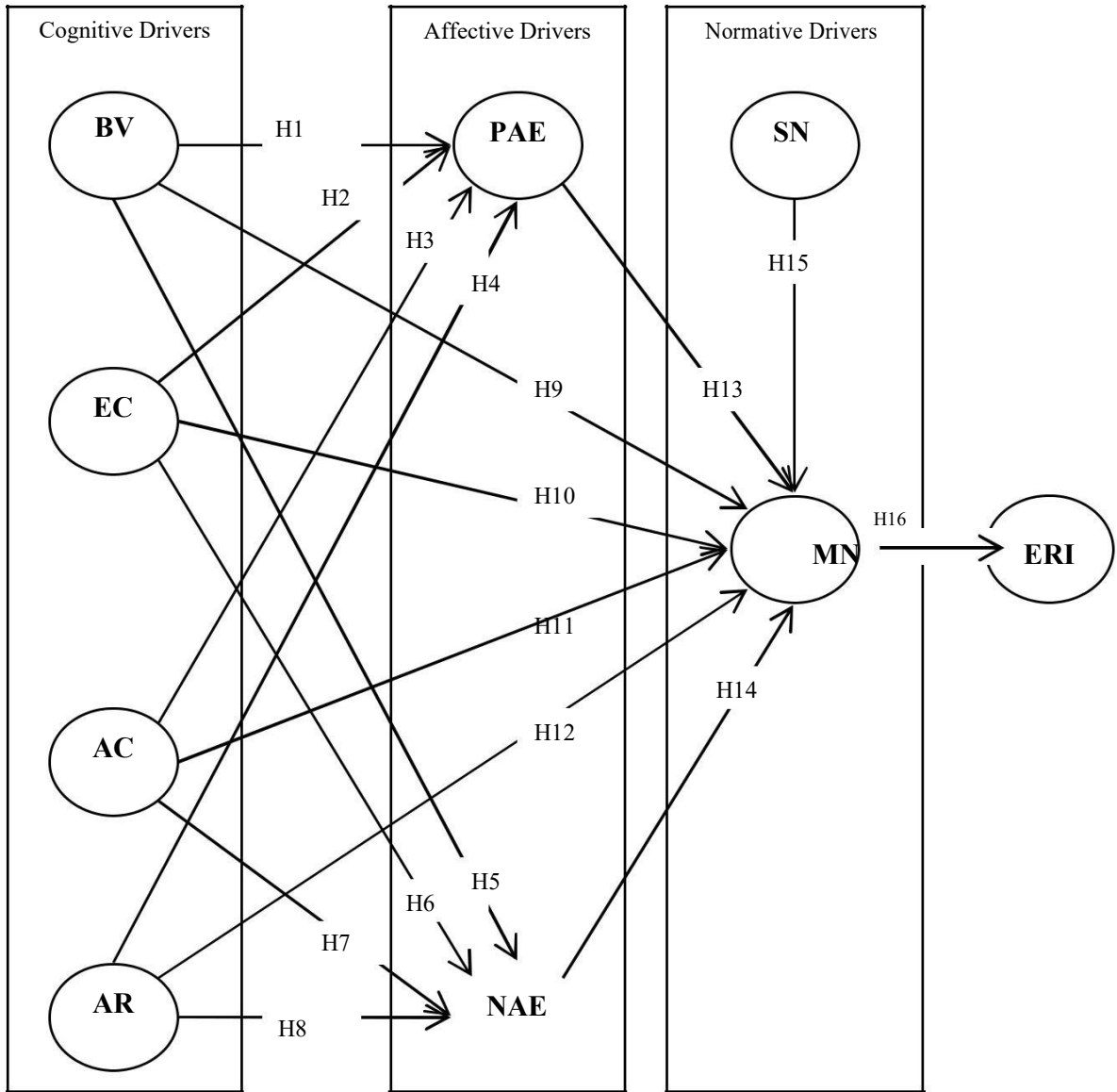
TABLE 2. THE STRUCTURAL MODEL RESULTS

Hypotheses	Independent variables	Dependent variables	Standardized estimates	T-values
H1	Biospheric value	Positive anticipated emotion	.279	3.948**
H2	Environmental concern	Positive anticipated emotion	.180	2.614**
H3	Awareness of consequences	Positive anticipated emotion	.272	3.641**
H4	Ascription of responsibility	Positive anticipated emotion	.031	.480
H5	Biospheric value	Negative anticipated emotion	-.113	-1.488
H6	Environmental concern	Negative anticipated emotion	-.195	-2.517*
H7	Awareness of consequences	Negative anticipated emotion	-.070	-.843
H8	Ascription of responsibility	Negative anticipated emotion	-.293	-3.978**
H9	Biospheric value	Moral norm	.096	2.064**
H10	Environmental concern	Moral norm	.328	6.723**
H11	Awareness of consequences	Moral norm	.300	5.856**
H12	Ascription of responsibility	Moral norm	.122	2.768**
H13	Positive anticipated emotion	Moral norm	.106	2.386*
H14	Negative anticipated emotion	Moral norm	.040	1.085
H15	Social norm	Moral norm	.253	4.768**
H16	Moral norm	Environmentally responsible intentions	.706	11.095**
Newly added path 1	Social norm	Environmentally responsible intentions	.197	3.301**
Newly added path 2	Negative anticipated emotion	Environmentally responsible intentions	-.107	-2.997**
Total impact on ERI: MN = .706** SN = .376** PAE = .075 NAE = -.078 BV = .097* EC = .261** AC = .237** AR = .065		Total variance explained: R ² for ERI = .761 R ² for MN = .841 R ² for PAE = .375 R ² for NAE = .096 * p < .05, ** p < .01	Indirect impact: $\beta_{SN-MN-ERI} = .179^{**}$ $\beta_{PAE-MN-ERI} = .075$ $\beta_{NAE-MN-ERI} = .028$ $\beta_{BV-PAE\&NAE-MN-ERI} = .097^{*}$ $\beta_{EC-PAE\&NAE-MN-ERI} = .261^{**}$ $\beta_{AC-PAE\&NAE-MN-ERI} = .257^{**}$ $\beta_{AR-PAE\&NAE-MN-ERI} = .065$	Goodness-of-fit statistics (proposed model): $\chi^2 = 1039.352$, $DF = 407$, $p < .001$, $\chi^2/DF = 2.554$, $RMSEA = .072$, $CFI = .928$, $IFI = .929$, $TLI = .918$ Goodness-of-fit statistics (revised model): $\chi^2 = 1024.416$, $DF = 405$, $p < .001$, $\chi^2/DF = 2.529$, $RMSEA = .071$, $CFI = .930$, $IFI = .930$, $TLI = .919$

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

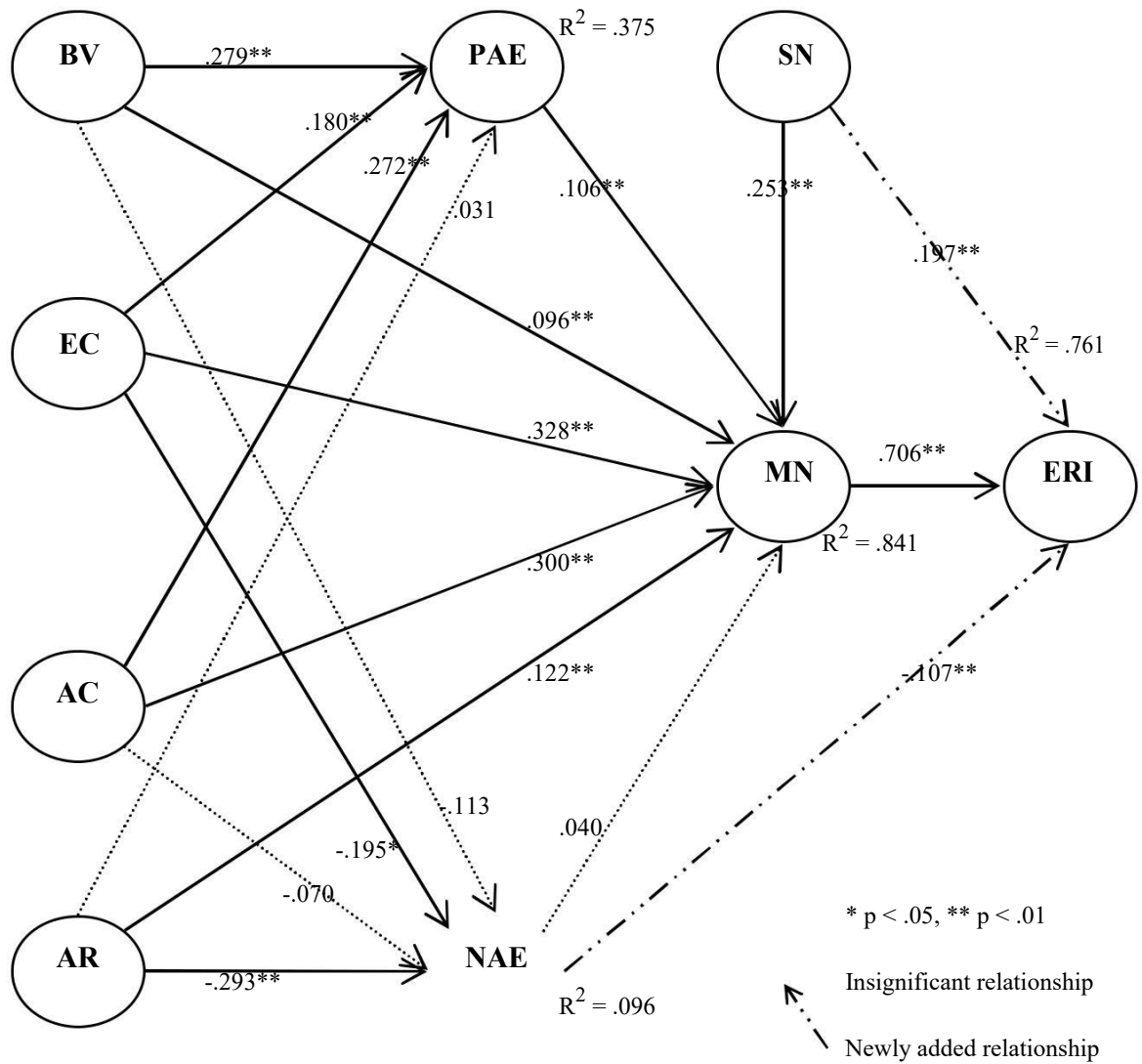
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FIGURE 1. Conceptual Model



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)



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 (proposed model): $\chi^2 = 1039.352$, $DF = 407$, $p < .001$, $\chi^2/DF = 2.554$, RMSEA = .072, CFI = .928, IFI = .929, TLI = .918

Note3. R^2 values for AFP, AFG, MN, and ERI in the proposed model were .375, .096, .859, and .709, respectively.

Note4. Goodness-of-fit statistics (revised model): $\chi^2 = 1024.416$, $DF = 405$, $p < .001$, $\chi^2/DF = 2.529$, RMSEA = .071, CFI = .930, IFI = .930, TLI = .919

Note5. Chi-square difference test between the original and revised models: $\Delta\chi^2 = 14.936$ ($\Delta DF = 2$), $p < .01$.