

**The effect of destination source credibility on tourist environmentally responsible behavior: An application of stimulus-organism-response theory**

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Keywords:	Destination source credibility, destination image, place attachment, tourist environmentally responsible behavior, Bayesian method
Abstract:	<p>A lack of credibility in the tourism sector has become a social and environmental concern. This article argues that destination source credibility as a destination-level stimulus can have significant influences on tourist environmentally responsible behavior. Based on the stimulus-organism-response theory, this paper developed an integrated model of the relationships between destination source credibility and tourist environmentally responsible behavior, with destination image (cognitive and affective) and place attachment as mediators. Three sets of survey data were collected at a Chinese national wetland park (N = 451), a world heritage cultural landscape site (N = 453), and a world cultural heritage site (N = 450). A serial multiple mediation model was tested through combining bootstrapping and Bayesian approaches. The results indicated that destination source credibility enhanced tourists' cognitive and affective image, place attachment, and environmentally responsible behavior. In addition, the effect of destination source credibility on environmentally responsible behavior was partially and sequentially mediated by (cognitive and then affective) destination image and place attachment, among which place attachment emerged as the most powerful mediator. Robustness of these findings was confirmed across different destination types. Theoretical contribution and practical implication for sustainable destination management are discussed.</p>

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5 **The effect of destination source credibility on tourist environmentally**  
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7 **responsible behavior: An application of stimulus-organism-response theory**  
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13 **Abstract**

14 A lack of credibility in the tourism sector has become a social and environmental concern.  
15 This article argues that destination source credibility as a destination-level stimulus can have  
16 significant influences on tourist environmentally responsible behavior. Based on the  
17 stimulus-organism-response theory, this paper developed an integrated model of the  
18 relationships between destination source credibility and tourist environmentally responsible  
19 behavior, with destination image (cognitive and affective) and place attachment as mediators.  
20 Three sets of survey data were collected at a Chinese national wetland park ( $N = 451$ ), a  
21 world heritage cultural landscape site ( $N = 453$ ), and a world cultural heritage site ( $N = 450$ ).  
22 A serial multiple mediation model was tested through combining bootstrapping and Bayesian  
23 approaches. The results indicated that destination source credibility enhanced tourists'  
24 cognitive and affective image, place attachment, and environmentally responsible behavior.  
25 In addition, the effect of destination source credibility on environmentally responsible  
26 behavior was partially and sequentially mediated by (cognitive and then affective) destination  
27 image and place attachment, among which place attachment emerged as the most powerful  
28 mediator. Robustness of these findings was confirmed across different destination types.  
29 Theoretical contribution and practical implication for sustainable destination management are  
30 discussed.

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48 **Keywords:** Destination source credibility; Destination image; Place attachment; Tourist  
49 environmentally responsible behavior; Bayesian method.  
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## 1. Introduction

Environmental protection and enhancement in tourism destinations has been a key issue for sustainable tourism development. Increasing studies indicate that tourists can exert power through adopting environmentally responsible behavior (e.g., Dolnicar et al., 2019; Lee et al., 2013). Due to its critical role in fostering sustainable tourism, tourist environmentally responsible behavior (hereafter, TERB) has become a major topic in tourism research. A special interest has been developed to understand the antecedents of TERB (e.g., Han, 2015; Li & Wu, 2019; Ramkissoon et al., 2013; Wang & Zhang, 2020). However, previous literature on TERB focuses relatively less on destination factors (e.g., destination marketing and branding practices) as the stimulus of TERB (e.g., Cheng et al., 2013; He et al., 2018; Su et al., 2020a).

The destination-level stimulus is important considering the asymmetric information between tourists and the destination (Su et al., 2020a). This information asymmetry exists primarily due to the unique feature of the tourism experience, i.e., transitorily being away from home in an unfamiliar destination usually for hedonic purposes (e.g., Li & Wu, 2019). What makes the examination of destination factors even more salient is the increasing report on negative tourism practices, such as the pitfalls of zero-fee (shopping) tours (Fu, 2010), false advertisement (Guan et al., 2017), unreasonable price (Liu et al., 2021), or other practices broadly termed as “tourist scams” (Xu et al., 2022). These deceptive activities can be easily disseminated online and socially amplified to impede the reputation of and thus trust toward a specific destination (Su et al., 2020b), induce (either on-site or prospective) tourists’ adverse destination perceptions (Zhang & Zhang, 2013), and result in deviant behavior, including unfriendly behaviors toward the destination environment (Fan et al., 2014). In other words, the information asymmetry characteristic of the tourism sector, its resultant tourism scams, and associated negative outcomes suggest that a lack of credibility in the tourism sector has become a social and environmental concern (Vinzencz et al., 2019). This points to the need of examining the credibility issue in tourists’ reactions toward the destination. Along the line, this paper examines an emerging concept—destination source credibility—as a destination-level stimulus in tourists’ decision-making process, with a particular focus on its

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4 impact on TERB.

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6 Destination source credibility is the application of credibility in tourism destinations  
7 (Pike, 2005). Credibility is the extent to which an object is viewed as a reliable and truthful  
8 source of information (Tirole, 1988). Source credibility is the information receiver's  
9 perceived trust in the source of information (Ohanian, 1990). Veasna et al. (2013) applied the  
10 concept of source credibility in tourism research and developed it into destination source  
11 credibility to represent a destination's ability in influencing people's beliefs on the validity of  
12 their marketing and communication assertions. Destination source credibility has been shown  
13 to significantly affect tourists' information search and selection behavior (Ayeh, 2015). It has  
14 also been supported to exert a strong influence on tourists' overall attitudes toward  
15 destinations (Kerstetter & Cho, 2004), tourist satisfaction, and their behavioral intentions  
16 (e.g., Kani et al., 2017; Veasna et al., 2013; Vg et al., 2021). Despite the important role of  
17 credible information in people's pro-social and environmental behavior (Halder et al., 2021)  
18 and the fact that the influence of credibility has been documented in various green consumer  
19 behavior settings (e.g., Carrete et al., 2012; Mansoor & Paul, 2021), surprisingly to the best  
20 of our awareness, there is no empirical study that explicitly examines the impact of  
21 destination source credibility on TERB, and the specific mechanisms that might explain the  
22 relationship.

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24 To make salient the role of destination source credibility as the destination-level  
25 stimulus in TERB, we argue that, theoretically, credible information source from the  
26 destination could signal the valued attributes (i.e., being reliable and trustworthy) of that  
27 destination, which might further cue tourists to perceive that destination as being socially  
28 responsible toward all stakeholders (including tourists); this perception of destination social  
29 responsibility has been established to increase TERB (e.g., Su, & Swanson, 2017). In  
30 addition, we argue that credible destination sources would contribute to tourists' positive  
31 notion of the destination image, and are likely congruent with tourists' self-concept, thus  
32 being more likely to arouse tourists' identification with and emotional attachment (i.e., place  
33 attachment) to that destination, and promote TERB as a result.

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35 Thus, this paper aims to empirically test the above-mentioned theoretical assumptions to  
36 determine (1) whether destination source credibility has a direct impact on TERB, (2)

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4 whether this impact might be sequentially mediated by destination image and place  
5 attachment, and (3) the relative importance of the proposed mediators on the relationship  
6 between destination source credibility and TERB. To this end, the current paper applied the  
7 stimulus-organism-response (SOR) theory (Mehrabian & Russell, 1974) as the overarching  
8 framework, considering that destination source credibility functions as a stimulus, destination  
9 image and place attachment as the organism, and TERB as the behavioral response. By  
10 examining a serial multiple mediation model based on the SOR framework, this paper makes  
11 an important theoretical contribution through linking together the separate literature on  
12 destination source credibility and TERB, and establishing their intermediate mechanisms.  
13 This paper can also offer practical implications to destination management organizations on  
14 tourist behavior management.

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16 The remaining paper is structured as follows: Section 2 provides a brief introduction of  
17 the SOR theory and a detailed explanation of the proposed hypotheses. Section 3 & 4 presents  
18 the method and results of Study 1, which was conducted in a nature-based tourism site. To  
19 explore whether the destination type might change the pattern of result<sup>1</sup>, in Section 5, we  
20 replicated the study in two urban and cultural tourism sites (Study 2 & 3) to cross-validate the  
21 results. Section 6 concludes with a discussion of results, theoretical and practical implications,  
22 and potential limitations.

## 2. Literature review and hypothesis development

### 2.1. Stimulus-organism-response theory

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24 The stimulus-organism-response (hereafter, SOR) theory by Mehrabian and Russell (1974)  
25 proposes that when exposed to a stimulus (S), people will generate cognitive and affective  
26 internal states (O), which will in turn trigger their responses (R). That is, individuals' internal  
27 states mediate the impact of stimulus on their eventual responses, such as behavioral  
28 responses of approach or avoidance (Lee et al., 2011). SOR offers a robust and parsimonious  
29 framework to integrate individual perceptions and emotions regarding external stimuli in  
30 explaining behaviors that are subsequently elicited (Su et al., 2020a). The validity of SOR has  
31 been verified in various settings, such as environmental psychology, consumer behavior, and  
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4 also pro-environmental studies in the tourism context (e.g., Kim et al., 2020; Su & Swanson,  
5 2017; Tang et al., 2019). The current paper applies the SOR theory to examine relationships  
6 between destination source credibility (as an extrinsic stimulus), destination image and place  
7 attachment (as the organism), and TERB (as the behavioral response).  
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11 *Stimulus - Destination source credibility.* Stimulus in the SOR theory can include both  
12 object stimuli and social psychological stimuli (Lee et al., 2011). Destination source  
13 credibility is regarded as the stimulus, as per Veasna's et al. (2013) definition of it as "the  
14 believability that the destination management is willing and capable of delivering on its  
15 promises related to a specific destination" (p.512). Source credibility of a particular  
16 destination is a function of individuals' knowledge and expertise in assessing the  
17 trustworthiness of the received information (Rieh, 2010). Though being perceived by tourists,  
18 destination source credibility is an objective destination attribute that depends predominately  
19 on external cues (Vg et al., 2021). That is, destination source credibility captures the  
20 capability of tourism destinations in enhancing tourists' believability concerning the validity  
21 of their assertions (Ohanian, 1990; Veasna et al., 2013). Thus, destination source credibility is  
22 a combination of the external object stimulus and a social psychological stimulus (Jacoby,  
23 2002), functioning as an initiating driver in our model.  
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37 *Organism - Destination image.* Organism in the SOR theory represents one's cognitive  
38 and affective internal states (Lee et al., 2011). In this paper, destination image can be  
39 properly treated as the organism. Destination image matters in tourists' destination choice,  
40 pre- and post-trip evaluation, decision-making and resultant behaviors (Stylos et al., 2016). In  
41 general, it is a set of impressions, beliefs, knowledge, and emotional feelings people have  
42 toward a particular tourism destination (Zhang et al., 2014). Destination image is a  
43 multifaceted concept, composed of cognitive and affective components (e.g., Chiu et al.,  
44 2014; Martin & Bosque, 2008). This research followed this two-dimensional view and  
45 divided destination image into cognitive and affective images. The cognitive component of  
46 destination image is an evaluation of the attributes or characteristics (for example, physical  
47 properties like beautiful scenery) of a tourism destination (Gartner, 1994), which together  
48 help form a cognitive mental schema of that place (Stylydis et al., 2017). The affective image,  
49 on the other hand, concerns an individual's subjective feelings about and emotional responses  
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4 toward the destination (Baloglu & Brinberg, 1997). Recent research also mentions conative  
5 image as another dimension of destination image (Stylos et al., 2016). Conative image is  
6 “analogous to behavior since it is the intent or action component” (Pike & Ryan, 2004, p.  
7 334). Though the three-dimensional structure is recognized by image scholars, conative  
8 image and its measurement overlap with destination loyalty, and these two concepts are often  
9 used interchangeably in the tourism literature (Stylidis et al., 2021, p.4). Therefore, conative  
10 image is not included here as we are interested in TERB as the behavioral response.

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17 *Organism - Place attachment.* Place attachment is a salient concept for studying the  
18 relationship between humans and a particular place (Ramkissoon et al., 2013). It is “a  
19 positive affective bond between an individual and a specific place, the main characteristic of  
20 which is the tendency of the individual to maintain closeness to such a place” (Hidalgo &  
21 Hernández, 2001, p. 274). Thus, place attachment represents an affective internal state that is  
22 captured as the organism in the SOR theory. Despite being a ubiquitous construct of people’s  
23 connection to places, place attachment has been diverse in terms of its conceptualization and  
24 measurement (Ramkissoon et al., 2013). Some studies measured place attachment with four  
25 dimensions: place identity, place dependence, place social bonding, and place affect (e.g.,  
26 Jiang et al. 2017; Kyle et al., 2004; Ramkissoon et al., 2012). This paper, however, only  
27 included place identity and place dependence as measures of place attachment (as a second-  
28 order construct) because these two dimensions (1) are the most classical conceptualization of  
29 place attachment (Vaske & Kobrin, 2001), (2) have been validated as an abbreviated and  
30 effective measure of place attachment (Boley et al., 2021), and (3) have been validated as  
31 first-order factors generating place attachment (e.g., Hosany et al., 2017; Loureiro, 2014). To  
32 augment the parsimony and interpretability of the model with fewer parameters, this paper  
33 regarded place attachment as a second-order construct, including place dependence and place  
34 identity.

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*Response - Tourist environmentally responsible behavior (TERB).* Response in the SOR  
theory is the final action or outcome of people’s reactions (Lee et al., 2011). In our model,  
TERB serves as the behavioral response. TERB is the behavior that “harms the environment  
as little as possible, or even benefits the environment” (Steg & Vlek, 2009, p.309).

Identifying approaches to increase TERB is of great importance to the cultural and ecological

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4 sustainability of destinations (Su et al., 2018). A number of theoretical frameworks, such as  
5 the theory of planned behavior, norm activation model, and value-belief-norm model, have  
6 been adopted to explain TERB (Wu et al., 2021). More recently, researchers have attempted  
7 to modify, extend, or merge the related theories to present a more integrated and  
8 comprehensive framework for constructing proposed conceptual models on TERB (e.g., Han,  
9 2015; Wang et al., 2020). Despite these available theoretical frameworks, TERB is still  
10 perceived as an under-studied topic that requires more empirical research (Antimova et al.,  
11 2012), particularly studies on the role of destination-level attributes as stimuli of TERB (He  
12 et al., 2018; Su, & Swanson, 2017).

21 Hence, to broaden the current understanding of the factors affecting TERB, this research  
22 employed the SOR theory as the overarching framework to examine: whether destination  
23 source credibility (as the stimulus) might facilitate TERB (as the virtuous behavioral response  
24 toward the destination) through engaging tourists' internal states of (cognitive and affective)  
25 destination image and place attachment (as the organism). Detailed hypotheses of the  
26 relationships between these variables are as follows.

## 32 **2.2. Relationships between stimulus and organism**

33 Destination source credibility is the degree to which tourists perceive the claims of tourism  
34 destination marketing practices as truthful and believable (Phau & Ong, 2007). Credible  
35 destination sources can lower tourists' information gathering and processing costs and their  
36 (to be) perceived risk/uncertainty (Veasna et al., 2013), thus serving as one of the central cues  
37 in tourists' decision-making process and influencing tourists' attitudes and their subsequent  
38 behavior (Jiménez-Barreto et al., 2020). In this paper, we argue that reliable information and  
39 contents from destination agencies (i.e., destination source credibility) can exert considerable  
40 influence on destination image. As per the definition, destination image is people'  
41 perceptions of and emotional responses toward the destination that are formed based on  
42 information processing from various sources (Zhang et al., 2014). According to signaling  
43 theory, when people consider the information source from a destination as credible, this  
44 stimulating factor is likely to exert a persuasive influence on their favorable perceptions of  
45 destination image and emotional arousal of that destination image (Connelly et al., 2011).  
46 This rationale of the positive association between destination source credibility and  
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4 destination image has been supported in previous studies (e.g., Kani et al., 2017; Veasna et al.,  
5 2013). However, these earlier studies either considered destination image only as a cognitive  
6 image or treated destination image as a unified latent variable, failing to test the influence of  
7 destination source credibility on affective image. Considering destination source credibility  
8 as the stimulus and a two-dimensional view of destination image, we hypothesize that:  
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14 *H<sub>1</sub>: Destination source credibility positively impacts tourists' cognitive image.*

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16 *H<sub>2</sub>: Destination source credibility positively impacts tourists' affective image.*

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18 Destination source credibility can also have an impact on tourists' place attachment  
19 toward the destination. Place attachment captures the bond (e.g., positive beliefs and  
20 emotional linkages) between tourists and the place. Specifically, the identity component of  
21 place attachment toward the destination reflects the degree to which tourists incorporate that  
22 destination in the self-concept (for example, "I identify strongly with this destination"); the  
23 dependence component of place attachment represents the emotionally functional connection  
24 of tourists toward the destination (for example, "I enjoy visiting this destination more than  
25 any other destination") (Vaske & Kobrin, 2001; Boley et al., 2021). The relationship between  
26 destination source credibility and place attachment can be explained by the theory of  
27 self-congruity. The notion of self-congruity is to assess whether there is a (mis)match  
28 between people's perception of an object (tourism destination in this case) and themselves  
29 (Sirgy, 1985). Only when tourists view the destination sources as reliable, trustworthy, and  
30 credible, will they perceive a match between the tourism destination and themselves and  
31 expand to include the destination in their self-concept (Reitsamer & Brunner-Sperdin, 2021).  
32 That means credible destination sources can make tourists identify with and become  
33 emotionally attached to that destination place (Shang & Luo, 2021; Veasna et al., 2013).  
34 Therefore, we posit that destination source credibility as the stimulus will have a positive  
35 impact on place attachment:  
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54 *H<sub>3</sub>: Destination source credibility positively impacts tourists' place attachment.*

### 55 56 **2.3. Relationship between stimulus and response**

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58 Credible information serves an important role in the decision-making of pro-social and  
59 environmental behavior (Halder et al., 2021). The influence of credibility has been  
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4 documented in various green consumer behavior settings (e.g., Carrete et al., 2012; Mansoor  
5 & Paul, 2021). For example, Carrete et al. (2012) found that a lack of credibility was one of  
6 the key themes related to uncertainty in people's adoption of green consumer behavior. In a  
7 similar vein, Mansoor & Paul (2021) suggested that perceived green brand credibility was an  
8 effective predictor of consumer choice behavior for green electronics. In the context of airline  
9 travel, Zhang et al. (2019) confirmed a positive and direct influence of source credibility on  
10 air travelers' purchase intention of aviation voluntary carbon offsetting.

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12 Although the significance of credibility is well recognized, the research team is not  
13 aware of any study that has explicitly examined the relationship between destination source  
14 credibility and TERB. In this paper, we assume that destination source credibility has positive  
15 influence on TERB. According to the signaling theory, a signal can reflect the valued  
16 attributes or characteristics of the signaler (Connelly et al., 2011). That is, credible sources of  
17 destination marketing and branding practices can cue tourists to perceive that destination as  
18 reliable and trustworthy and, by extension, view the destination as socially responsible to  
19 accommodate the needs of different stakeholders (including tourists as the guest). As  
20 reciprocal responses, tourists will perform virtuous behaviors (e.g., positive word-of-mouth  
21 or revisit) (e.g., Su et al., 2020b), including behaving in an environmentally responsible way  
22 during travel in that destination (Su & Swanson, 2017). Therefore, we hypothesize that:

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*H<sub>4</sub>: Destination source credibility positively impacts TERB.*

#### **2.4. Mediating role of the organism**

Based on the SOR framework, this paper further hypothesizes that the influence of destination source credibility on TERB will be mediated by the organism, i.e., (cognitive and affective) destination image and place attachment. We explain the theoretical relationships among these variables as follows:

Destination image as a mediator has been explored in previous studies. For instance, Veasna et al. (2013) found that the effect of destination source credibility on place attachment is indirectly influenced via destination image. Their study, however, only assessed the mediating effect of the cognitive component of destination image while not examining the potential impact of affective image. Notably, the role of positive emotions toward the

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4 destination as a mediator of the link between destination-level stimulus and TERB was  
5 highlighted in a later study by Su and Swanson (2017).  
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8 In this paper, we argue that (cognitive and affective) destination image will mediate the  
9 relationship between destination source credibility and TERB. As mentioned previously,  
10 destination image is formulated through information processing from various sources (Zhang  
11 et al., 2014). When tourists perceive the marketing source from a specific destination as true  
12 and believe in the promises delivered by that destination, they are more likely to have a  
13 positive evaluation of and be emotionally aroused by that destination image (e.g., Kani et al.,  
14 2017; Veasna et al., 2013). This favorable evaluation and emotional arousal of the destination  
15 image would further strengthen the perceived match between tourists and that credible and  
16 truthful destination—a term called “signal fit” (Connelly et al., 2011)—such that tourists are  
17 more likely to engage in TERB when in that destination as a virtuous reciprocal response to  
18 the signified characteristics (e.g., being reliable) of the destination. Thus, the following two  
19 hypotheses are proposed:  
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31 *H<sub>5</sub>: The positive impact of destination source credibility on TERB is mediated by*  
32 *tourists’ cognitive image.*  
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36 *H<sub>6</sub>: The positive impact of destination source credibility on TERB is mediated by*  
37 *tourists’ affective image.*  
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40 Place attachment is often identified as a mediator between exogenous and endogenous  
41 variables. In environmental studies, for example, Cheng et al. (2013) indicated that TERB  
42 was indirectly influenced by destination attractiveness via the mediation of place attachment.  
43 Similarly, Fan et al. (2014) demonstrated that place attachment mediated the effect of  
44 destination image on TERB. In addition, Hosany et al. (2017) found that positive emotions  
45 were mediated by place attachment in forming TERB. In this paper, we propose that place  
46 attachment will mediate the effect of destination source credibility on TERB. The theoretical  
47 explanation for this assumption is clear. Due to the self-concept congruity effect (Sirgy,  
48 1985), tourists are more likely to identify with and become emotionally attached to a  
49 destination that is perceived as reliable and trustful; this identification and attachment of that  
50 place would further lead to subsequent TERB (e.g., Cheng et al., 2013; Ramkissoon et al.,  
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4 2013; Vaske & Kobrin, 2001) since the place (tourism destination) is included as an extended  
5 part of the self-concept and serves to satisfy people's emotional and functional needs. This  
6 explanation is also aligned with the SOR framework; thus, we hypothesize that:  
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10 *H<sub>7</sub>: The positive impact of destination source credibility on TERB is mediated by*  
11 *tourists' place attachment.*  
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## 14 **2.5. A serial multiple mediation model**

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16 Building on the above-mentioned hypotheses, this paper goes further to predict that the  
17 impact of destination source credibility (as the external stimulus and an initiating driver in  
18 the model) on TERB (the response) will be mediated, in sequence, by destination image and  
19 place attachment (the organism). Some paths of the serial mediation model have been  
20 supported in previous studies. For example, destination image mediated the relationship  
21 between destination source credibility and place attachment toward the destination (e.g.,  
22 Veasna et al., 2013). Meanwhile, place attachment mediated the link between destination  
23 image and TERB (Fan et al., 2014). Concerning the sequence of the cognition and  
24 affect/emotion component of destination image, we propose that cognitive image is a driver  
25 of affective image. According to the appraisal theory, things are cognitively appraised before  
26 engendering affective reactions (Keller et al., 2012), especially when there is an external  
27 stimulus. This means, when tourists are exposed to the stimulus of destination marketing  
28 sources, they develop cognitive evaluations (e.g., whether these information sources are  
29 credible) first before processing these sources to form a cognitive image of that destination;  
30 afterwards, favorable evaluation of cognitive image would give rise to affective responses  
31 toward the destination image, which then facilitate subsequent intentions or behaviors—a  
32 process of the “cognitive primacy” model (Lazarus, 1984). Drawing upon relationships  
33 between these key variables and adopting SOR as the theoretical foundation, we thus  
34 proposed an integrative model (see Figure 1) with destination source credibility as the  
35 stimulus, cognitive image as the starting point of the mediation that induces affective image  
36 and place attachment, and eventually leads to TERB.  
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57 *H<sub>8</sub>: The positive impact of destination source credibility on TERB is sequentially*  
58 *mediated by tourists' cognitive image, affective image, and place attachment.*  
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4 In view of the fact that affective image is influenced by cognitive image (e.g., Chiu et al.,  
5 2014; Martin & Bosque, 2008) and these two cognitive and affective components can  
6 separately trigger the formation of place attachment (e.g., Veasna et al., 2013; Huang et al.,  
7 2021), the serial multiple specific indirect paths shown in Figure 1 can also be divided into  
8 additional three types: (1) cognitive image→ affective image mediation sequence; (2)  
9 cognitive image→ place attachment mediation sequence; (3) affective image→ place  
10 attachment mediation sequence. Identifying the significant differences among the multiple  
11 mediation paths is of importance to unearth the most critical mediators. Accordingly, there is  
12 an urgent need for a specific indirect test that provides tenable evidence on the relationships  
13 among destination source credibility and tourist environmentally responsible behavior. Based  
14 on the arguments discussed above, the following three hypotheses are provided:  
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25 *H<sub>9</sub>: The positive impact of destination source credibility on TERB is sequentially*  
26 *mediated by tourists' cognitive image and affective image.*

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29 *H<sub>10</sub>: The positive impact of destination source credibility on TERB is sequentially*  
30 *mediated by tourists' cognitive image and place attachment.*

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32  
33 *H<sub>11</sub>: The positive impact of destination source credibility on TERB is sequentially*  
34 *mediated by tourists' affective image and place attachment.*

35  
36  
37 [Insert Figure 1 here]

### 38 39 40 **3. Methods**

#### 41 42 **3.1. Measurement of constructs**

43 Multi-item scales were used to measure each construct. Validated scales from previous  
44 research were identified and modified to suit the study setting (see Appendix 1 for full  
45 information). Six items were adopted from Veasna et al. (2013) to measure destination source  
46 credibility. Cognitive image was evaluated using five items from Baloglu and McCleary  
47 (1999) and Prayag and Ryan (2012), which was later validated by Shen (2012). Four items  
48 from Styliadis et al. (2017) and Stylos et al. (2016) were used to measure affective image.  
49 Place attachment was considered as a two-dimensional concept: place dependence and place  
50 identify. Place dependence refers to the functional bonds that people have with places (Anton  
51 & Lawrence, 2016), while place identity a profound connection between a person's identity  
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4 and a place (Ramkissoon et al., 2012). Four items were adapted and modified from  
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6 Ramkissoon et al. (2013) and Tsai (2012) to measure place dependence. The scale of place  
7  
8 identity was adapted from Tonge et al. (2015) and Xu and Zhang (2016). For TERB, this  
9  
10 study considers it as one-dimensional construct (e.g., Chiu et al., 2014; Su & Swanson, 2017).  
11  
12 Four items from the work of Fan et al. (2014), which was later validated by Qiu (2017) and  
13  
14 Xu's et al. (2018) in Chinese contexts, were adopted to measure TERB. Most of the items  
15  
16 were measured based on a 5-point Likert scales, anchored from "strongly disagree" (1) to  
17  
18 "strongly agree" (5). Affective image was the only variable measured on a five-point semantic  
19  
20 differential scale.

### 21 ***3.2. Pretest of measures***

22  
23 The survey was conducted in Chinese. Translation and back-translation between English and  
24  
25 Chinese were used to enhance the quality of the survey. Prior to the formal data collection, a  
26  
27 pre-test of the measurement items was conducted. Three tourism researchers and five  
28  
29 experienced tourists formed an expert panel to check the content validity of the survey. In  
30  
31 addition, a pilot test was performed with a convenience sample of 60 tourists who visited Xixi  
32  
33 Wetland National Park in February 2017. They were invited to respond to all indicators and  
34  
35 provide feedback regarding any issues with the scale. The reliability check via Cronbach's  
36  
37 alpha (all > 0.70) and validity through standard factor loading (all > 0.50) indicated acceptable  
38  
39 reliability and validity.

### 40 ***3.3. Data collection and respondent characteristics***

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42 Three sets of data were collected in three tourism destinations in Hangzhou, China. The first  
43  
44 set of survey data was collected in Xixi National Wetland Park in March and June 2017. It  
45  
46 was used to test the conceptual model. The second and third sets of data were collected in  
47  
48 West Lake (a world heritage cultural landscape site) and China's Grand Canal (Hangzhou  
49  
50 section) (a world cultural heritage site) from August to November 2021 under the request of  
51  
52 reviewers' comments to cross-validate the model. All the three destinations are open access to  
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54 tourists without fee charging to the majority sites. They thus attract millions of diversified  
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56 tourists every year. The three destinations share commonality in terms of being  
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58 environmentally sensitive and requiring TERB (Li & Wu, 2019).

59  
60 A convenient sampling procedure technique was adopted in all sessions of data

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4 collection. Four different trained research assistants from a local university helped administer  
5 the survey at the exists of the wetland park or key gathering points of tourists. Only domestic  
6 tourists and those who were willing to participate were given the self-administered  
7 questionnaire. The process was closely supervised and monitored by the principal researcher.  
8  
9 Questionnaires were distributed to five hundred participants with 451 valid ones subsequently  
10 identified. To ensure the quality of robustness test, 453 and 450 copies of valid surveys were  
11 collected in the second and third studies, respectively. Appendix 2 presents the participant  
12 profile.

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Prior to the formal data analyses, the three datasets were assessed for normality. The skewness and kurtosis values of all indicators varied from -1 to +1, indicating that the data met normality requirements (Hair et al., 2009). The Henze-Zirkler multivariate normality test was applied to determine if there was a normal distribution (Henze & Zirkler, 1990). It was found that the three datasets were multivariate normal ( $HZ_{Study\ 1-3} = [1.002, 1.017]$ ,  $p_{Study\ 1-3} = [0.493, 0.499]$ ). Accordingly, all the three sets of data in this study were appropriate for further analysis by AMOS. In the following results sections, the results from study 1 will be firstly presented, followed by the robustness-test using the second and third sets of data.

## 4. Results from the Xixi Wetland Park (Study 1)

### 4.1. Common method variance test

Two statistical analyses were performed to ensure that common method variance (CMV) was not a major concern. Harman's single-factor test was used to evaluate the possible occurrence of CMV. Exploratory factor analysis indicated the existence of a multi-factor structure. The variance for the first factor (40.3%) was below the threshold of 50%, indicating that CMV did not appear to be a severe issue (Podsakoff & Organ, 1986). Confirmatory factor analysis was employed to verify whether a common latent factor accounted for all of the variance in the data (Nunkoo et al., 2018). The proposed measurement model fit significantly better than the common factor model ( $\Delta\chi^2(12) = 1942.086$ ,  $p < 0.001$ ), showing that CMV was not an issue for the current research.

### 4.2. Measurement model test

Before testing the proposed hypotheses using SEM, confirmatory factor analysis was

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4 conducted to assess the reliability and validity of the constructs and to evaluate the model fit  
5 for the measurement model. A series of results (TLI = 0.926, CFI = 0.934, SRMR = 0.050,  
6 and RMSEA = 0.057) suggested that the measurement model was a good fit to the data.  
7  
8 Cronbach's alpha of each construct ranged from 0.827 to 0.895 (Table 1), indicating the  
9 internal reliability of the measurement model was acceptable. In addition, two types of  
10 construct validity measures, including convergent and discriminant validity, were assessed.  
11 Place attachment was regarded as a second-order construct (e.g., Hosany et al., 2017),  
12 including place dependence ( $\beta = 0.791, p < 0.001$ ) and place identity ( $\beta = 0.887, p < 0.001$ ).  
13 The composite reliability values ranged from 0.827 to 0.896 (Table 1). The values of standard  
14 factor loadings, average variance extracted (AVE) and composite reliability of each construct  
15 suggested high convergent validity (Hair et al., 2009). Discriminant validity was calculated  
16 by comparing the square root of each construct's AVE with the correlations between pairs of  
17 latent variables (Hair et al. 2009). Strong evidence of discriminant validity was observed  
18 (Table 2). These results revealed that the measurement model was both reliable and valid.  
19 Further hypothesis testing of the structural model was then justified.  
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33 [Insert Tables 1 & 2 here]

### 34 35 **4.3. Structural model test**

36 The hypothesized relationships were evaluated using SEM. Table 3 and Figure 2 present the  
37 standardized coefficient estimates and corresponding *t*-values. The values of the analysis  
38 showed that the goodness-of-fit indices of the structural model fit the data well. The findings  
39 provided support for all hypothesized direct relationships.  
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44 [Insert Table 3 here]

45 [Insert Figure 2 here]

### 46 47 48 **4.4. Explanatory power of model**

49 The explanatory power of the model is estimated by the  $R^2$  of its major endogenous variables  
50 (Cohen, 1988).  $R^2$  values of 0.25, 0.09, and 0.01 are the threshold values to indicate large,  
51 medium, and small effects, respectively. The findings from the squared multiple correlations  
52 showed that the structural model explained 39.9%, 48.7%, 57.1%, and 54.9% of the variance  
53 for cognitive image, affective image, place attachment, and TERB, respectively. These  
54 results reveal indicated the model possessed sufficient explanatory power. The large effects  
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4 endogenous variables are captured in the model.

#### 5 6 **4.5. Mediating effects test**

7 The relationship between destination source credibility and TERB was hypothesized to be  
8 partially mediated by cognitive image, affective image, and place attachment. To test the  
9 significance of indirect effects, a combination of bootstrapping and Bayesian approaches was  
10 used. While it is common to employ *p*-values in tourism research, recent studies suggest  
11 using bootstrapping and Bayesian approaches (Assaf & Tsionas, 2018; Feinberg, 2012).  
12 Bootstrapping is a powerful statistical approach (MacKinnon et al., 2004), which is especially  
13 suitable to test intervening variable effects as it does not impose the assumption of normality  
14 of the sampling distribution (Preacher & Hayes, 2008). The Bayesian method for analyzing  
15 mediation effects has similar advantages as those for bootstrapping (Yuan & MacKinnon,  
16 2009). Using both bootstrapping and Bayesian approaches to test for mediating effects is a  
17 type of methodological triangulation, which ensures the validity of the analysis.  
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29 The number of bootstrap samples was set to 5,000, using both percentile and  
30 bias-corrected confidence intervals of 95% (hereafter, PCI and BCI). The bootstrapping  
31 approach was created and run to test the specific indirect effects (Table 4). In bootstrapping  
32 analysis, the mediation effect is significant if the confidence interval for the indirect effect  
33 does not contain zero (Zhao et al., 2010). Hence, a significant specific indirect effect was  
34 identified for destination source credibility on TERB via place attachment (PCI: [0.089,  
35 0.268]; BCI: [0.093, 0.277]), providing support for H<sub>7</sub>. Similarly, H<sub>8</sub>, H<sub>10</sub>, and H<sub>11</sub> were  
36 confirmed. However, the mediating effect for CI between destination source credibility and  
37 TERB was not significant (PCI: [-0.020, 0.145]; BCI: [-0.021, 0.143]), thus not supporting  
38 H<sub>5</sub>. Likewise, H<sub>6</sub> and H<sub>9</sub> were not supported.  
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48 The custom-estimands option in the Bayesian estimation procedure with Markov chain  
49 Monte Carlo (MCMC) simulation techniques in AMOS (Arbuckle, 2009) was also  
50 undertaken to test the mediating effect. The analysis produced identical results to the  
51 bootstrapping approach (Table 4).  
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56 [Insert Table 4 here]

57 To further explore the relative importance of the significant indirect effects between  
58 destination source credibility and TERB, pairwise contrasts of these effects were conducted.  
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4 The magnitude of the DSC→PA→TERB path was significantly different from the  
5 DSC→CI→PA→TERB path (PCI: [-0.224, -0.023]; BCI: [-0.233, -0.028]; Bayesian: [-0.221,  
6 -0.03]). Likewise, the DSC→PA→TERB path and the DSC→CI→AI→PA→TERB path had  
7 significant differences. Similarly, the DSC→PA→TERB path was significantly stronger than  
8 the DSC→AI→PA→TERB path. However, by comparing the paths among the DSC→CI→  
9 →PA→TERB path, the DSC→CI→AI→PA→TERB path, and the DSC→AI→PA→TERB  
10 path, there were no significant differences due to the 95% confidence intervals including zero  
11 (Table 5).  
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19 [Insert Table 5 here]  
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## 22 **5. Robustness test in the West Lake (Study 2) and China's Grand Canal (Study 3):**

23 To cross-validate our results and also explore whether the destination type might alter the  
24 mechanism of destination source credibility on TERB (Stylidis et al., 2021; Wang et al.,  
25 2020), we conducted similar analyses with the second and third sets of data collected at West  
26 Lake ( $N = 453$ ) and China's Grand Canal ( $N = 450$ ). Though representing diverse tourism  
27 destinations for the cross-validation purpose, these three tourism sites are all environmentally  
28 fragile and require TERB. The conceptual model passed through both reliability and validity  
29 tests (see Appendix 3). In addition to structural model assessment (Figures 3 & 4), specific  
30 mediation analysis was examined via bootstrapping and Bayesian approaches (see Tables 4 &  
31 5). Overall, the cross-validation test of all the proposed hypotheses generated highly  
32 consistent findings between the three samples, which indicated that the findings withstood the  
33 change of the destination context and were thus robust.  
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45 [Insert Figures 3 & 4 here]  
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## 48 **6. Discussion, conclusions and implications**

### 49 **6.1. Discussion and conclusions**

50 The contribution of TERB to a destination's sustainability and the necessity to understand its  
51 antecedents provided the motivation for this research. Stimulus-organism-response (SOR)  
52 theory was adopted to develop a conceptual framework, delineating the direct and indirect  
53 antecedents of TERB. Three sets of survey data were conducted to examine a serial multiple  
54 mediation model through a combination of bootstrapping and Bayesian method. The results  
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3 supported the majority of the research hypotheses. It's worth noting that the results of studies 2  
4 & 3 were identical with the results in study 1.  
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7 Consistent with the prior literature (Veasna et al., 2013), this paper provided tenable  
8 support for the viewpoint that cognitive image can be driven by destination source credibility  
9 (H<sub>1</sub>). This is likely explained by reasoning that destination source credibility serves as an  
10 important signal for the formation of cognition image as per signaling theory (Connelly et al.,  
11 2011). Unlike the previous studies focusing on cognitive image, this paper makes a  
12 pioneering effort to shed light on the link between destination source credibility and affective  
13 image. It was found that the positive effect in the above association was also identified (H<sub>2</sub>).  
14 Once tourists regard destination information source is believable, positive emotions toward a  
15 specific destination will be activated. That is, perceived credible information source, not only  
16 helps contribute to the cognition image generation, but also results in the affective image  
17 response.  
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20 In support of the theory of self-congruity (Sirgy, 1985) and previous research findings  
21 (Shang & Luo, 2021; Veasna et al., 2013), the results demonstrated that destination source  
22 credibility significantly enhanced the formation of place attachment (H<sub>3</sub>). It means that  
23 credible information source can augment their self-concept toward a particular destination to  
24 shape deep bonds between individuals and places. Similar to the past studies' findings in the  
25 area of green consumer behavior (e.g., Carrete et al., 2012; Mansoor & Paul, 2021), the  
26 results of this paper showed that destination source credibility was an important trigger of  
27 TERB (H<sub>4</sub>). These findings thus highlight the importance of destination source credibility as  
28 an important foundation for two-dimensional image, place attachment, and TERB. Contrary  
29 to Wang's et al. (2020) results that affective attitude mediated the impact of cognitive attitude  
30 on TERB, this paper found that there would be a superior role of cognition in explaining  
31 TERB when an external stimulus was salient. Specific to this paper, when tourists were  
32 exposed to the destination stimulus (i.e., destination source credibility), they first formed  
33 cognitive image as a precursor of affective image in the link to TERB. This result highlights  
34 the critical role of external stimulus in shaping and even changing the primacy of cognition or  
35 emotion in tourists' pro-environmental decision-making.  
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60 This paper supported four specific indirect relationships: DSC→PA→TERB (H<sub>7</sub>),

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4 DSC→CI→AI→PA→TERB (H<sub>8</sub>), DSC→CI→PA→TERB (H<sub>10</sub>), and  
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6 DSC→AI→PA→TERB (H<sub>11</sub>) (Table 4). However, the other three proposed indirect  
7  
8 relationships were not supported: DSC→CI→TERB (H<sub>5</sub>), DSC→AI→TERB (H<sub>6</sub>), and DSC  
9  
10 →CI→AI→TERB (H<sub>9</sub>). The findings implied that unless place attachment is formed, neither  
11  
12 cognitive nor affective images will increase TERB. A pairwise contrast of the specific  
13  
14 significant indirect effects was conducted and provided evidence of the importance of place  
15  
16 attachment. This paper indicated that place attachment, when compared to cognitive and  
17  
18 affective images, was the most important mediating variable between destination source  
19  
20 credibility and TERB. This result can be explained as follows. It was commonly recognized  
21  
22 that compared to cognitive factors, affection plays a more important role in  
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24 pro-environmental behavior (Wang & Wu, 2015). Affective image is dynamic and subject to  
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26 change in different time periods (Choi et al., 2011). That is, it is an immediate and temporary  
27  
28 emotion toward a specific destination (Fan et al., 2014). Compared to affective image, place  
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30 attachment is showing better explanatory power in predicting TERB. This result is in  
31  
32 congruence with Qiu's (2017) finding. One explanation may be that attachment is understood  
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34 as a deep and lasting affective bonding between individuals across time and space (Bowlby,  
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36 1969). Once place attachment is formed, it will lead to TERB. The emotional tie elicits  
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38 empathy toward destination which further altruistically provoke the attitude towards  
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40 destination protection (Chubchuwong et al., 2015); tourists with stronger place attachment are  
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42 inclined to place more affection on the particular destination and generate  
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44 pro-environmental attitudes thereby (Qu et al., 2019).

## 45 **6.2. Theoretical contributions**

46 Building upon the key concepts advanced in previous studies, this paper extends the existing  
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48 work in four notable ways, generating unique theoretical implications. First, this represents  
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50 the first attempt to assess the effects of destination source credibility as the destination-level  
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52 stimulus on TERB. This is important considering that previous literature on TERB  
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54 concentrates relatively less on destination factors (e.g., destination marketing and branding  
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56 practices) as the stimulus of TERB (e.g., Cheng et al., 2013; He et al., 2018; Su et al., 2020a).  
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58 The empirical support for a significant impact of destination source credibility on TERB  
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60 advances studies on source credibility and environmentally responsible behavior (e.g.,

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4 Carrete et al., 2012; Halder et al., 2021; Mansoor & Paul, 2021) through its application to  
5 destinations, a non-residential context.  
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8 Second, this paper adds to the current literature by examining destination image and  
9 place attachment as mediators of the impact of destination source credibility on TERB. To the  
10 researchers' best knowledge, no previous studies have considered the link between destination  
11 source credibility and TERB, nor is there empirical evidence for the mediating role of any  
12 intervening variables in the association. Therefore, this study is innovative and contributes to  
13 the existing body of knowledge in two ways. One lies in its investigation of the indirect  
14 effects of destination source credibility on TERB via destination image and place attachment.  
15 Four significant indirect paths are identified through which destination source credibility  
16 influences TERB (Table 4). These results indicate that the indirect effects of destination  
17 source credibility on TERB are recognized via the mediating effects of destination image and  
18 place attachment. This lends empirical evidence to support the link of  
19 DSC→CI→AI→PA→TERB. The sequence provides insights into the underlying relationship  
20 between destination source credibility and TERB, making this a useful addition to the existing  
21 literature. Moreover, benchmarking the influences of cognitive image, affective image, and  
22 place attachment within the relationship between destination source credibility and TERB is  
23 insightful. The comparative importance of the four significant indirect paths is explained in a  
24 serial multiple mediator model, providing a comprehensive view for a better theoretical  
25 understanding of the role of destination source credibility in the TERB decision-making  
26 process.  
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30 Further, the selection of three differentiated study settings offers ample opportunities to  
31 validate the proposed framework beyond a single destination and across different types of  
32 tourism attractions. Cross-validation method was conducted to examine a conceptual model's  
33 robust in different contexts. The results of all three studies demonstrated that consistent  
34 findings between the three samples were totally established. It means that the proposed model  
35 (Figure 1) holds across different situations, not only in nature-based tourism contexts, but also  
36 in urban and cultural tourism contexts.  
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40 Fourth, this research offers a methodological contribution to the current tourism  
41 literature by combining the bootstrapping and Bayesian approaches for the mediation analysis.  
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4 The past few years have witnessed an increasing number of tourism studies employing the  
5 bootstrapping method for testing mediation effects (e.g., Hosany et al., 2017). However, the  
6 Bayesian approach has not been used to its full advantage (Assaf, Tsionas, & Oh, 2018). This  
7 investigation responded to previous calls for using the Bayesian approach in tourism studies  
8 (Assaf & Tsionas, 2018). The results of the Bayesian test for indirect effects were in line with  
9 the results of the bootstrapping test. Such a combination of methods strengthens validity by  
10 comparing the respective results and makes a pioneering methodological attempt by  
11 performing specific mediation analysis via multiple methods.  
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### 19 **6.3. Practical implications**

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21 The findings are potentially meaningful for sustainable destination management. The  
22 results pinpointed the critical role of destination source credibility in predicting cognitive  
23 and affective images, place attachment and TERB. Our results lend empirical evidence  
24 tourist scams (Xu et al., 2022), as these deceptive activities can also have negative  
25 environmental potentials, impeding tourists' pro-environmental actions toward the  
26 destination. In this sense, destination management organizations (DMOs) should pay special  
27 attention to the credibility of the communicated information sources, through creating and  
28 delivering trustworthy information. For example, in one of our study sites, Xixi National  
29 Wetland Park takes various strategies to enhance tourists' perceived credibility. In this  
30 national park, the prices for all the services and souvenirs are all clearly marked. In addition,  
31 tourist flow information is shared with on-site visitors and potential visitors through smart  
32 technologies so that they can better manage their schedules and view the destination source as  
33 transparent and reliable. In so doing, destination managers can facilitate tourists' positive  
34 evaluation of destination image and evoke their emotional resonance with the destination—a  
35 process that not only plays a role in (either onsite or perspective) tourists' destination choice  
36 but also their virtuous behavior toward the destination. This is important because destination  
37 managers can, to some extent, encourage tourists' environmentally friendly behaviors simply  
38 by doing their in-role job in affirming the reliability and trustfulness of their marketing and  
39 communication practices. Another benefit of communicating credible information sources is  
40 supported by our results. Specifically, place attachment functions as the most powerful  
41 mediator in the link between destination source credibility and TERB. That is, when the  
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4 information sources tourists receive from destination agencies are deemed trustful, they are  
5 likely to enhance their identification with and emotional attachment to the destination, and  
6 then behave in a responsible way to steward the natural environment. This result might be  
7 especially interesting to destination managers who are struggling to promote tourists'  
8 attachment to the destination or who are unsure about the power of credible information  
9 sources in eliciting TERB. In sum, our results suggest that destination managers might make  
10 the most use of credible information sources in their future destination marketing and  
11 branding practices in a way that also benefits the natural environment.  
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#### 19 ***6.4. Limitations and future research directions***

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21 This paper had limitations that must be acknowledged. First, this study uses self-evaluated  
22 behavior, which may have potential biases. Future research can conduct observations of  
23 actual TERB, or people's evaluations of others' TERB, to minimize potential biases. Second,  
24 the proposed theoretical model based on SOR is open to extension. Additional constructs can  
25 be included to extend the theoretical framework. For instance, TERB may differ based on the  
26 types of destination information sources used by tourists. Examining how different  
27 categories of information sources that might drive TERB will thus be interesting and  
28 meaningful. Additionally, the difficulty of performing TERB varies with the specific  
29 behavioral types. Future research should focus on the sub-types of TERB to explore the  
30 differences in the individuals' decision-making process. Finally, given that TERB can be  
31 explained by multiple implementation paths with equivalent results, fuzzy-set qualitative  
32 comparative analysis can be adopted to explore the sufficient causal configurations that  
33 resulting in TERB. A combination of these two approaches might help open the "black-box"  
34 of TERB in a more holistic and systematic way.  
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Figure

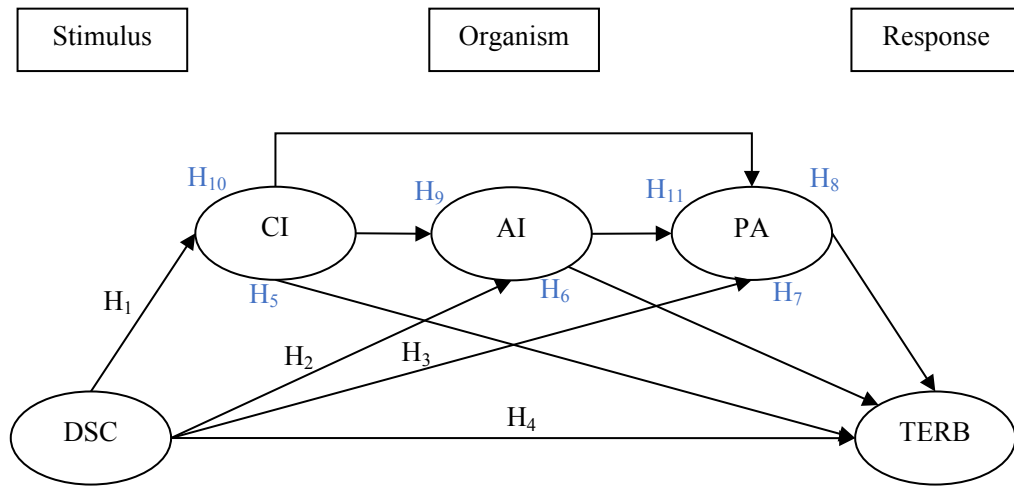


Figure 1. Conceptual model

Note:  $H_1 = DSC \rightarrow CI$ ,  $H_2 = DSC \rightarrow AI$ ,  $H_3 = DSC \rightarrow PA$ ,  $H_4 = DSC \rightarrow TERB$ ,  $H_5 = DSC \rightarrow CI \rightarrow TERB$ ,  $H_6 = DSC \rightarrow AI \rightarrow TERB$ ,  $H_7 = DSC \rightarrow PA \rightarrow TERB$ ,  $H_8 = DSC \rightarrow CI \rightarrow AI \rightarrow PA \rightarrow TERB$ ,  $H_9 = DSC \rightarrow CI \rightarrow AI \rightarrow TERB$ ,  $H_{10} = DSC \rightarrow CI \rightarrow PA \rightarrow TERB$ ,  $H_{11} = DSC \rightarrow AI \rightarrow PA \rightarrow TERB$ ; the mediating hypotheses were colored as blue. DSC = destination source credibility, CI = cognitive image, AI = affective image, PA = place attachment, TERB = tourist environmentally responsible behavior.

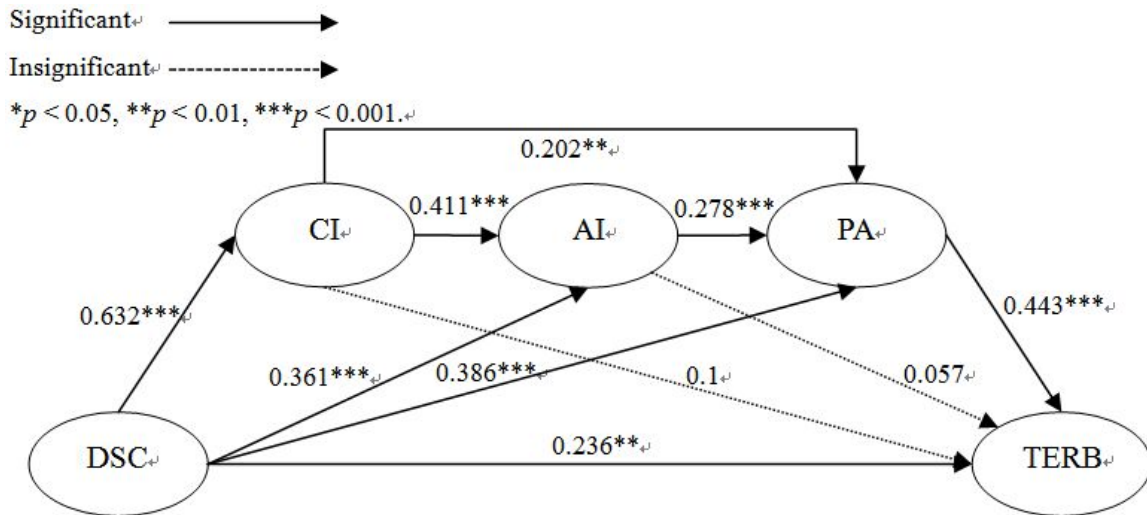


Figure 2. Results of hypothetical model (Study 1).

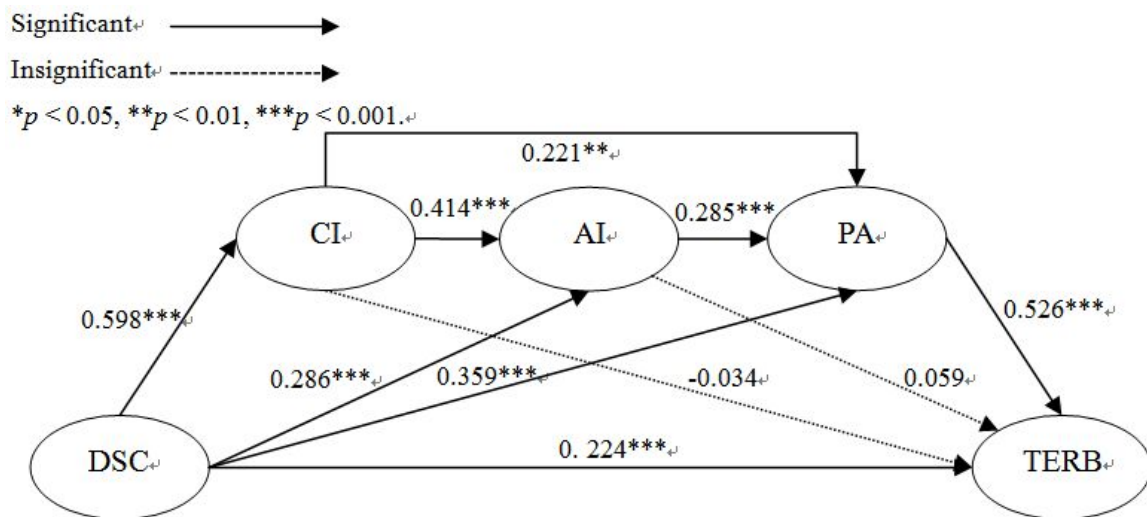


Figure 3. Results of hypothetical model (Study 2).

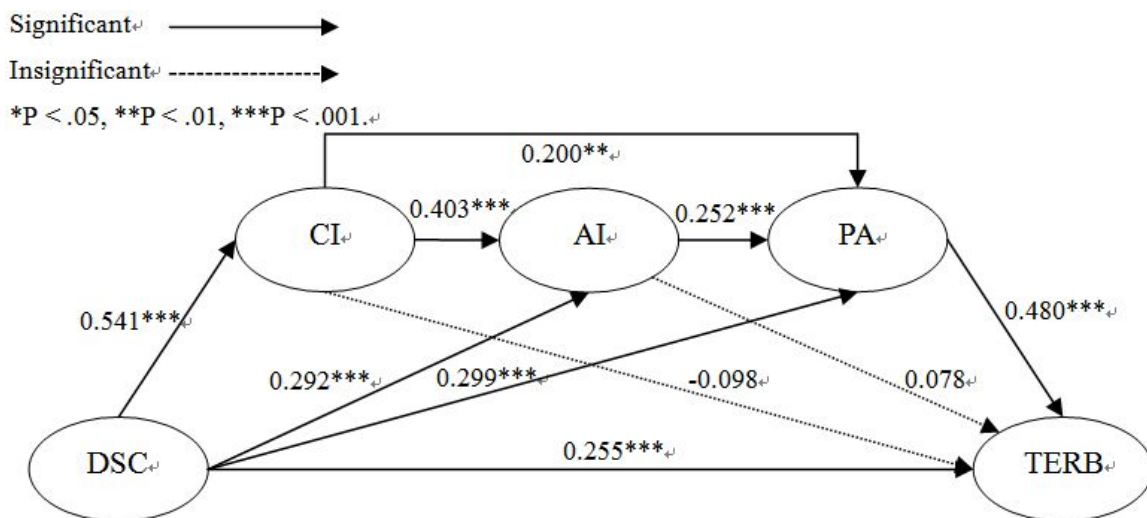


Figure 4. Results of hypothetical model (Study 3).



## Table

Table 1. Assessment of measurement model (Study 1).

Construct and item	Mean	SD	Std. factor loading	<i>t</i> values	CR	AVE	alpha
DSC					0.896	0.590	0.895
DSC1	3.579	0.667	0.757	15.138			
DSC2	3.696	0.679	0.769	15.358			
DSC3	3.670	0.649	0.790	15.758			
DSC4	3.721	0.661	0.845	16.783			
DSC5	3.721	0.675	0.733	14.658			
DSC6	3.674	0.668	0.707	—			
CI					0.866	0.563	0.863
CI1	3.896	0.703	0.738	14.092			
CI2	3.812	0.701	0.789	14.927			
CI3	3.860	0.690	0.795	15.034			
CI4	3.712	0.725	0.734	14.015			
CI5	3.594	0.731	0.692	—			
AI					0.857	0.601	0.858
AI1	3.809	0.724	0.707	15.714			
AI2	3.883	0.722	0.736	16.502			
AI3	3.643	0.777	0.833	19.096			
AI4	3.645	0.793	0.818	—			
PA					0.827	0.706	0.892
PD			0.791	11.219	0.891	0.671	0.890
PD1	3.106	0.900	0.808	19.170			
PD2	3.228	0.874	0.816	19.405			
PD3	3.073	0.936	0.835	20.000			
PD4	3.027	0.901	0.817	—			
PI			0.887	—	0.832	0.554	0.831
PI1	3.386	0.747	0.763	14.671			
PI2	3.501	0.737	0.772	14.813			
PI3	3.370	0.776	0.724	13.981			
PI4	3.295	0.830	0.716	—			
TERB					0.828	0.547	0.827
TERB1	3.552	0.702	0.780	14.615			
TERB2	3.585	0.656	0.668	12.759			
TERB3	3.455	0.745	0.796	14.854			
TERB4	3.648	0.648	0.706	—			

Note: DSC= destination source credibility; CI= cognitive image; AI= affective image; PA= place attachment; PD= place dependence; PI= place identity; TERB= tourist environmentally responsible behavior; CR= composite reliability; AVE= average variance extracted.

Table 2. Discriminant validity assessment.

Case	Construct	DSC	CI	AI	PA	TERB
Study 1 (N=451)	DSC	<b>0.768</b>				
	CI	0.632	<b>0.751</b>			
	AI	0.621	0.639	<b>0.775</b>		
	PA	0.686	0.624	0.647	<b>0.840</b>	
	TERB	0.638	0.561	0.553	0.704	<b>0.739</b>
Study 2 (N=453)	DSC	<b>0.820</b>				
	CI	0.598	<b>0.787</b>			
	AI	0.534	0.585	<b>0.813</b>		
	PA	0.643	0.602	0.606	<b>0.769</b>	
	TERB	0.573	0.451	0.477	0.685	<b>0.796</b>
Study 3 (N=450)	DSC	<b>0.785</b>				
	CI	0.541	<b>0.766</b>			
	AI	0.510	0.560	<b>0.801</b>		
	PA	0.536	0.503	0.517	<b>0.796</b>	
	TERB	0.499	0.325	0.401	0.608	<b>0.754</b>

Table 3. Structural model assessment.

Case	Hypotheses	paths	Standardized coefficient	<i>t</i> -value	Results
Study 1 ( <i>N</i> =451)	H <sub>1</sub>	DSC→CI	0.632***	10.198	Supported
	H <sub>2</sub>	DSC→AI	0.361***	5.867	Supported
	H <sub>3</sub>	DSC→PA	0.386***	5.423	Supported
	H <sub>4</sub>	DSC→TERB	0.236**	3.213	Supported
$\chi^2/df = 2.467$ , TLI = 0.926, CFI = 0.934, SRMR = 0.050, RMSEA = 0.057					
Study 2 ( <i>N</i> =453)	H <sub>1</sub>	DSC→CI	0.598***	11.451	Supported
	H <sub>2</sub>	DSC→AI	0.286***	5.003	Supported
	H <sub>3</sub>	DSC→PA	0.359***	5.490	Supported
	H <sub>4</sub>	DSC→TERB	0.224***	3.330	Supported
$\chi^2/df = 2.955$ , TLI = 0.925, CFI = 0.933, SRMR = 0.044, RMSEA = 0.066					
Study 3 ( <i>N</i> =450)	H <sub>1</sub>	DSC→CI	0.541***	10.098	Supported
	H <sub>2</sub>	DSC→AI	0.292***	5.134	Supported
	H <sub>3</sub>	DSC→PA	0.299***	4.655	Supported
	H <sub>4</sub>	DSC→TERB	0.255***	3.901	Supported
$\chi^2/df = 2.594$ , TLI = 0.930, CFI = 0.938, SRMR = 0.043, RMSEA = 0.060					

Note: \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.

Table 4. Specific mediation analysis through bootstrapping and Bayesian approaches.

Hypotheses	Specific indirect path	Case	Point estimate	Product of coefficients		Bootstrap				Bayesian		Results
				SE	Z	PCI		BCI		95% Lower	95% Upper	
H <sub>5</sub>	DSC→CI→TERB	Study 1	0.061	0.042	1.452	-0.020	0.145	-0.021	0.143	-0.024	0.150	Not supported
		Study 2	-0.018	0.037	-0.486	-0.093	0.052	-0.092	0.054	-0.090	0.050	Not supported
		Study 3	-0.050	0.037	-1.351	-0.130	0.016	-0.127	0.016	-0.121	0.015	Not supported
H <sub>6</sub>	DSC→AI→TERB	Study 1	0.020	0.027	0.741	-0.031	0.077	-0.027	0.081	-0.030	0.074	Not supported
		Study 2	0.015	0.018	0.833	-0.022	0.049	-0.017	0.052	-0.019	0.051	Not supported
		Study 3	0.022	0.02	1.100	-0.016	0.063	-0.014	0.064	-0.014	0.061	Not supported
H <sub>7</sub>	DSC→PA→TERB	Study 1	0.166	0.046	3.609	0.089	0.268	0.093	0.277	0.089	0.272	Supported
		Study 2	0.165	0.041	4.024	0.097	0.258	0.096	0.257	0.091	0.259	Supported
		Study 3	0.136	0.038	3.579	0.069	0.217	0.074	0.222	0.071	0.223	Supported
H <sub>8</sub>	DSC→CI→AI→PA→TERB	Study 1	0.031	0.014	2.214	0.011	0.064	0.012	0.068	0.013	0.059	Supported
		Study 2	0.032	0.012	2.667	0.014	0.060	0.015	0.063	0.015	0.059	Supported
		Study 3	0.025	0.010	2.500	0.010	0.047	0.011	0.050	0.011	0.045	Supported
H <sub>9</sub>	DSC→CI→AI→TERB	Study 1	0.014	0.019	0.737	-0.025	0.052	-0.021	0.056	-0.021	0.053	Not supported
		Study 2	0.013	0.016	0.813	-0.018	0.045	-0.016	0.047	-0.016	0.044	Not supported
		Study 3	0.016	0.015	1.067	-0.012	0.046	-0.011	0.047	-0.01	0.047	Not supported
H <sub>10</sub>	DSC→CI→PA→TERB	Study 1	0.055	0.026	2.115	0.013	0.114	0.015	0.120	0.016	0.108	Supported
		Study 2	0.061	0.023	2.652	0.021	0.114	0.023	0.117	0.021	0.113	Supported
		Study 3	0.049	0.02	2.450	0.015	0.093	0.017	0.097	0.015	0.093	Supported
H <sub>11</sub>	DSC→AI→PA→TERB	Study 1	0.043	0.017	2.529	0.016	0.083	0.017	0.089	0.017	0.081	Supported
		Study 2	0.038	0.014	2.714	0.016	0.069	0.018	0.074	0.016	0.071	Supported

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Study 3	0.034	0.012	2.833	0.013	0.061	0.015	0.067	0.014	0.061	Supported
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Table 5. Contrasts among significant specific indirect effects.

Contrast	Case	Point estimate	Product of coefficients		Bootstrap				Bayesian		Results
			SE	Z	PCI		BCI		95% Lower	95% Upper	
					Lower	Upper	Lower	Upper			
①-②	Study 1	0.024	0.028	0.857	-0.029	0.083	-0.026	0.085	-0.025	0.079	No significant difference
	Study 2	0.028	0.026	1.077	-0.022	0.082	-0.021	0.085	-0.019	0.08	No significant difference
	Study 3	0.024	0.023	1.043	-0.02	0.073	-0.02	0.073	-0.017	0.07	No significant difference
①-③	Study 1	0.012	0.031	0.387	-0.049	0.076	-0.048	0.077	-0.043	0.071	No significant difference
	Study 2	0.023	0.027	0.852	-0.027	0.081	-0.025	0.083	-0.028	0.078	No significant difference
	Study 3	0.016	0.025	0.640	-0.031	0.067	-0.031	0.067	-0.029	0.065	No significant difference
①-④	Study 1	-0.111	0.051	-2.176	-0.224	-0.023	-0.233	-0.028	-0.221	-0.03	Significant difference
	Study 2	-0.105	0.046	-2.283	-0.205	-0.022	-0.204	-0.021	-0.203	-0.019	Significant difference
	Study 3	-0.087	0.041	-2.122	-0.171	-0.01	-0.176	-0.013	-0.181	-0.01	Significant difference No
②-③	Study 1	-0.012	0.013	-0.923	-0.042	0.012	-0.047	0.008	-0.039	0.01	significant difference No
	Study 2	-0.005	0.011	-0.455	-0.027	0.019	-0.029	0.018	-0.03	0.017	significant difference No
	Study 3	-0.009	0.009	-1.000	-0.028	0.01	-0.03	0.008	-0.03	0.01	significant difference
②-④	Study 1	-0.135	0.045	-3.000	-0.235	-0.061	-0.246	-0.065	-0.237	-0.061	Significant difference
	Study 2	-0.133	0.041	-3.244	-0.223	-0.063	-0.224	-0.063	-0.224	-0.06	Significant difference
	Study 3	-0.111	0.038	-2.921	-0.191	-0.045	-0.195	-0.048	-0.197	-0.044	Significant difference
③-④	Study 1	-0.123	0.044	-2.795	-0.221	-0.049	-0.228	-0.052	-0.225	-0.047	Significant difference
	Study 2	-0.128	0.041	-3.122	-0.22	-0.056	-0.219	-0.056	-0.22	-0.054	Significant difference
	Study 3	-0.102	0.038	-2.684	-0.184	-0.035	-0.188	-0.037	-0.191	-0.034	Significant difference

Note: ① DSC→CI→PA→TERB path; ② DSC→CI→AI→PA→TERB path; ③ DSC→AI→PA→TERB path; ④ DSC→PA→TERB path.

Appendix 1. Measures of model constructs.

Construct	Item	Item label	Source
Destination source credibility (DSC)	Information claims from this destination are believable.	DSC1	Veasna et al., 2013
	This destination is committed to delivering on its claims.	DSC2	
	Over time, my experiences with this destination led me to expect it keeps its promises.	DSC3	
	This destination has a name you can trust.	DSC4	
	This destination has the ability to deliver what it promises.	DSC5	
	This destination delivers what it promises.	DSC6	
Cognitive image (CI)	Beautiful scenery	CI1	Baloglu & McCleary, 1999; Prayag & Ryan, 2012
	Cleanliness	CI2	
	Offers personal safety	CI3	
	Good quality of infrastructure	CI4	
	General level of service is high	CI5	
Affective image (AI)	Unpleasant – pleasant	AI1	Stylidis et al., 2017; Stylos et al., 2016
	Distressing – relaxing	AI2	
	Gloomy – exciting	AI3	
	Boring – interesting	AI4	
Place dependence (PD)	For the activities I enjoy the most, the settings and facilities provided by this destination are the best.	PD1	Ramkissoon et al., 2013; Tsai, 2012
	For what I like to do, I could not imagine anything better than the settings and facilities provided by this destination.	PD2	
	I enjoy visiting this destination more than any other destination.	PD3	
	I do not find any other destination capable of serving my needs better than this destination.	PD4	

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Place identity (PI)	Visiting this destination has a special meaning in my life.	PI1	Tonge et al., 2015;
	I identify strongly with this destination.	PI2	Xu & Zhang, 2016
	This destination is a very special destination to me.	PI3	
	I feel visiting this destination is part of my life.	PI4	
Tourist environment- ally responsible behavior (TERB)	I discuss environmental protection issues of the destination with companions.	TERB1	Fan et al., 2014
	I try to convince companions to adopt positive behaviors in the environment of this destination.	TERB2	
	I report activities damaging the environment of the destination.	TERB3	
	When I see trash in the destination, I pick it up.	TERB4	

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## Appendix 2. Demographic profiles of respondents.

Variable	Category	Study 1 ( <i>N</i> = 451)		Study 2 ( <i>N</i> = 453)		Study 3 ( <i>N</i> = 450)	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender	Male	220	48.8%	218	48.1%	221	49.1%
	Female	231	51.2%	235	51.9%	229	50.9%
Age	< 25	134	29.7%	94	20.8%	98	21.8%
	25-34	169	37.5%	131	28.9%	127	28.2%
	35-44	102	22.6%	122	26.9%	114	25.3%
	45-59	37	8.2%	82	18.1%	85	18.9%
	≥ 60	9	2.0%	24	5.3%	26	5.8%
Information sources	Traditional channels	108	23.9%	66	14.6%	71	15.8%
	Tourism network marketing platforms	164	36.4%	82	18.1%	83	18.4%
	Consumer-generated media (CGM)	78	17.3%	97	21.4%	91	20.2%
	More than the above sources	101	22.4%	208	45.9%	205	45.6%
Education	Junior high or below	20	4.4%	26	5.7%	31	6.9%
	Senior high, TAFE or similar	62	13.7%	45	9.9%	55	12.2%
	Diploma education	159	35.3%	141	31.1%	137	30.4%
	Undergraduate	170	37.7%	177	39.1%	168	37.3%
	Postgraduate	40	8.9%	64	14.1%	59	13.1%
Individual disposable income (RMB/month)	< 2000	106	23.5%	77	17.0%	81	18.0%
	2000-2999	93	20.6%	72	15.9%	73	16.2%
	3000-3999	78	17.3%	70	15.5%	67	14.9%
	4000-4999	69	15.3%	67	14.8%	64	14.2%
	5000-5999	46	10.2%	60	13.2%	62	13.8%
	≥ 6000	59	13.1%	107	23.6%	103	22.9%

Appendix 3. Assessment of measurement model (Study 2 & 3).

Construct	Study 2 (N=453)					Study 3 (N=450)				
	Loading	<i>t</i> values	CR	AVE	alpha	Loading	<i>t</i> values	CR	AVE	alpha
DSC			0.925	0.672	0.924			0.906	0.617	0.906
DSC1	0.733	17.890				0.748	17.415			
DSC2	0.869	23.133				0.825	19.858			
DSC3	0.801	20.345				0.753	17.559			
DSC4	0.808	20.63				0.744	17.304			
DSC5	0.864	22.931				0.828	19.962			
DSC6	0.835	—				0.810	—	—		
CI			0.891	0.620	0.889			0.876	0.587	0.876
CI1	0.746	16.219				0.71	15.242			
CI2	0.826	18.219				0.774	16.815			
CI3	0.815	17.955				0.778	16.897			
CI4	0.777	16.998				0.786	17.088			
CI5	0.769	—				0.779	—			
AI			0.886	0.661	0.883			0.877	0.641	0.874
AI1	0.892	17.73				0.85	17.195			
AI2	0.835	16.789				0.778	15.816			
AI3	0.8	16.127				0.838	16.991			
AI4	0.714	—				0.731	—			
PA			0.743	0.592	0.912			0.772	0.633	0.915
PD	0.722	11.581	0.930	0.768	0.928	0.693	10.591			0.927
PD1	0.894	28.767				0.895	29.557			
PD2	0.884	28.09				0.876	28.109			
PD3	0.819	23.864				0.807	23.518			
PD4	0.906	—				0.917	—			
PI	0.814	—	0.904	0.703	0.903	0.886	—	0.903	0.699	0.902

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PI1	0.833	21.565			0.836	20.891			
PI2	0.903	24.279			0.846	21.245			
PI3	0.77	19.132			0.829	20.661			
PI4	0.843	—			0.832	—			
TERB			0.874	0.634	0.873		0.840	0.569	0.840
TERB1	0.786	16.865			0.741	14.415			
TERB2	0.874	18.736			0.778	15.043			
TERB3	0.758	16.207			0.763	14.801			
TERB4	0.762	—			0.733	—			
Goodness-of-fit indices	$\chi^2/df = 2.955$ , TLI = 0.925, CFI = 0.933, SRMR = 0.0438, RMSEA = 0.066				$\chi^2/df = 2.594$ , TLI = 0.930, CFI = 0.938, SRMR = 0.0431, RMSEA = 0.060				