

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

ABSTRACT

The antecedents of tourist environmentally responsible behavior have been widely studied, while the effect of destination source credibility on this behavior remains unclear. The purpose of this research, based on stimulus-organism-response theory, was to develop 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. Data were collected from 451 domestic tourists in a Chinese national wetland park. A serial multiple mediator model was tested through a combination of bootstrapping and Bayesian approaches. The results indicated that destination source credibility enhances a destination's cognitive and affective images, place attachment, and environmentally responsible behavior. Cognitive and affective images, and place attachment partially mediated the effect of destination source credibility on environmentally responsible behavior. Place attachment was found to be the most powerful mediating variables. Theoretical contributions and practical implications to natural area destination sustainability are discussed.

Keywords: Destination source credibility; destination image; place attachment; tourist environmentally responsible behavior; Bayesian method.

Introduction

Tourism's economic contribution to the global economy and its potential negative impacts on the environment have been recognized (Loureiro, Guerreiro, & Han, 2021). Diverse problematic issues (e.g. air/soil/water pollution, greenhouse effect, exhaustion of natural resources, and extinction/loss of species) can be managed and resolved by correcting the human behaviors to be an environmentally-sustainable way (Han, 2021). Tourists can exert power through adopting environmentally responsible behavior (Dolnicar, Cvelbar, & Grün, 2019). If they practice behaviors that are comparatively better for the destination, adverse social and

environmental pressures can be lowered (Lee, Jan, & Yang, 2013). Environmentally responsible behavior can play a crucial role in reducing environmental problems, minimizing impacts on the environment, and improving environmental sustainability (Lin & Lee, 2020). Consequently, practitioners and academic scholars are paying greater attention to tourist environmentally responsible behavior (hereafter called as TERB). Studies in this area have been rapidly increasing, especially those examining behavioral antecedents (e.g., Cheng, Wu, & Huang, 2013; Han & Hyun, 2018). A number of theoretical frameworks have been tested in different tourism and hospitality contexts, including the theory of planned behavior (TPB) (Han, Hsu, & Sheu, 2010), norm activation model (NAM) (Confente & Scarpi, 2020), value-belief-norm theory (VBN) (Van Riper & Kyle, 2014), and value-attitude-behavior model (VAB) (Kim & Stepchenkova, 2020). While this stream of scholarly investigations is insightful, it has overlooked the effect of destination source credibility on TERB.

Credibility is influential in various green consumer behavior settings (Carrete, Castaño, Felix, Centeno, & González, 2012; Rahbar & Wahid, 2011). Its importance has also been recognized in tourism destination marketing practices and is labeled as destination source credibility (hereafter called as DSC) (Pike, 2005). DSC represents a destination's ability to influence people's beliefs on the validity of their assertions (Ohanian, 1990). DSC not only significantly affects information search and selection behavior (Ayeh, 2015), but also exerts a strong influence on overall attitudes toward destinations (Kerstetter & Cho, 2004), satisfaction, and behavioral intentions (Kani, Aziz, Sambasivan, & Bojei, 2017; Veasna, Wu, & Huang, 2013). However, the linkage between destination source credibility and TERB remains less understood.

The main intention of this work is to investigate the potential for more applied, informed ways of understanding tourists' behaviour and their relationship with the environments they visit. Thus, to fill the apparent literature void, this research adopted the stimulus-organism-response (SOR) theory to explore the underlying relationship between destination source credibility and TERB. SOR theory has been widely used in environmental psychology, where environmental cues act as stimuli, generating internal cognitions and emotions and, in turn, activating people to adopt behaviors forming the responses (Mehrabian & Russell, 1974). SOR has also been proven as a viable theoretical framework to address behavior in a variety of

contexts such as online hotel booking (Baek & Ok, 2017), word-of-mouth (Wang, Wang, Xue, Wang, & Li., 2018), and, recently, TERB (Su, Hsu, & Boostrom Jr., 2020; Su & Swanson, 2017). It is proposed that destination source credibility acts as a stimulus influencing internal cognitions and emotions (organism), which in turn trigger TERB (response).

A review of the existing studies indicates that destination image and place attachment act as perceptions and emotions (organism) operating between destination source credibility and TERB. Destination image is the sum of ideas, beliefs, and impressions a tourist has of a particular destination (Crompton, 1979), which exert influences on post-visit behavior such as revisit intentions (Prayag & Ryan, 2012). Chiu, Lee, and Chen (2014) investigated destination image's effect on TERB and found cognitive and affective images predicted TERB. Kani et al. (2017) determined that destination source credibility had a positive influence on destination image. Thus, this research postulates that destination image is a mediator between destination source credibility and TERB. The other important factor considered is place attachment, which is a person's positive emotional bond with a specific place (Lewicka, 2011). Previous studies indicated that place attachment is an antecedent of TERB (e.g., Cheng et al., 2013; Tonge, Ryan, Moore, & Beckley, 2015). Veasna et al. (2013) found that destination source credibility and destination image have positive effects on place attachment. This research proposes that place attachment is another factor in a mediating role between destination source credibility and TERB.

To the best of the research team's knowledge, this is the first study integrating the four variables (destination source credibility, destination image, place attachment, and TERB) into a single theoretical model to understand TERB. The three research objectives were as follows: (1) utilize SOR theory to develop a model that provides a better understanding of how destination source credibility affects TERB by taking destination image and place attachment as mediators; (2) identify the mediating role of destination image and place attachment within the proposed theoretical framework; and (3) determine the relative importance of the mediators between destination source credibility and TERB. To reach these aims, the following section reviews SOR theory and the concepts of key variables, discusses the hypotheses, and develops the conceptual model.

Literature review and hypothesis development

Stimulus-organism-response theory

Mehrabian and Russell (1974) proposed the stimulus-organism-response (SOR) theory in which a stimulus is processed into meaningful information, arouses individuals, and further assists their decision-making. Organism represents a person's cognitive and affective condition. Response is the final action or the final outcome of people's reactions (Wang et al., 2018). SOR theory is about "delineating how the organism mediates the relationship between the stimulus and response by postulating different mediating mechanisms operating in the organism" (Wu & Li, 2018, p. 77). SOR integrates people's responses to explain individual perceptions and emotions regarding external stimuli and the negative or positive behaviors that are subsequently elicited (Chen & Yao, 2018). The validity of SOR has been verified in environmental psychology, consumer behavior, and tourism studies (Baek & Ok, 2017; Su & Swanson, 2017). Applying SOR to a nature-based destination, it was proposed that DSC (stimulus), as an extrinsic cue, engages the intrinsic states of destination image (including cognitive and affective images) formation and place attachment (organism), which then lead to TERB (response).

Stimulus - Destination source credibility: Credibility is "people's assessment of whether information is trustworthy based on their own expertise and knowledge" (Rieh, 2010, p.1338) and is critical because it interacts with information contents to create influence (Finch, Deephouse, & Varella, 2015). Source credibility is the information receiver's perceived trust in the source of information (Ohanian, 1990).

Veasna et al. (2013) applied the concept of source credibility in tourism research and developed it into destination source credibility, which they defined as "the believability that the destination management is willing and capable of delivering on its promises related to a specific destination" (p. 512). Kani et al. (2017) and Loureiro (2017) examined the concept in different contexts, and their scales showed a high consistency with that of Veasna et al. (2013). This research adopted Veasna et al.'s (2013) scale.

Organism - Destination image: Destination image is influential in affecting destination choice, decision making, post-trip evaluation, and future behaviors (e.g., Stylos, Vassiliadis,

Bellou, & Andronikidis, 2016; Zhang, Fu, Cai, & Lu, 2014). Due to its subjectivity, complexity, and elusive nature, there is no universal definition for destination image (Martin & Bosque, 2008). Although subject to much debate, most researchers agree that destination image is a multifaceted concept, composed of cognitive and affective components (Chiu et al., 2014; Fu, Ye & Xiang, 2016). Cognitive image is an evaluation of different destination attributes (Gartner, 1994), whereas affective image concerns subjective feelings about destinations (Baloglu & Brinberg, 1997). This research followed this two-dimensional view and divided destination image into cognitive and affective images.

Organism - Place attachment: Place attachment is a salient concept for studying the relationship between a person and a particular place (Ramkissoon, Smith, & Weiler, 2013). It is derived from social interactions and people's evaluation of the environment (Hosany, Prayag, Veen, Huang, & Deesilatham, 2017). In tourism, place attachment is found to be an effective predictor of satisfaction, loyalty, and TERB (Lee, Pei, Ryu, & Choi, 2019; Ramkissoon et al., 2013), resulting in several studies exploring its antecedents, including DSC and destination image (Veasna et al., 2013). They, however, examined only the cognitive component, neglecting affective images.

Due to its importance in environmental psychology, considerable attention has been paid to the measurement of place attachment. This investigation adopted the most-widely used two-dimensional structure composed of place dependence and identity (Lewicka, 2011). Place dependence refers to the functional bonds that people have with places (Anton & Lawrence, 2016), described as "how well a setting serves to achieve an individual's goals given the existing range of alternative sites available" (Tonge et al., 2015, p. 731). Place identity is "the identification of the tourist with a certain place or with its symbolic value" (Ram, Björk, & Weidenfeld, 2016, p. 111), reflecting "a profound connection between a place and one's personal identity" (Ramkissoon, Weiler, & Smith, 2012, p. 263).

Response - Tourist environmentally responsible behavior: Tourist environmentally responsible behavior (TERB) is a subset of environmentally responsible behavior and has been increasingly studied because it is crucial to the success and sustainability of tourism development (Cheng et al., 2013; Xu, Kim, Liang, & Ryu, 2018). It is concerned with 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 important to the cultural and ecological sustainability of destinations (Su, Swanson, & Chen, 2018). Similar with environmentally responsible behavior research, a number of theoretical frameworks, such as the Theory of Planned Behavior, Norm Activation Model, and Value-Belief-Norm model, have been adopted to predict TERB (e.g., Han et al., 2010; Van Riper & Kyle, 2014). More recently, researchers have attempted to modify, extend, or merge the related theories to present a more integrated and comprehensive framework for constructing proposed conceptual models that reflect TERB (e.g., Han, 2015; Confente & Scarpi, 2020). Despite these available theoretical frameworks, TERB is still perceived as an under-studied topic requiring more empirical research (Antimova, Nawijn, & Peeters, 2012). Employing innovative methodological and theoretical approaches to conceptualize and validate the TERB model is still needed (Olya & Akhshik, 2019). To broaden the current understanding of the factors affecting TERB, this research employed stimulus-organism-response theory as its research framework.

Some researchers view TERB as a multi-dimensional concept (e.g., Lee et al., 2013), while others treat it as a one-dimensional construct (e.g., Su & Swanson, 2017; Li, Wei, Qu, & Qiu, 2020). Fan, Qiu, and Wu (2014), who were the first to study TERB in China, regarded it as a one-dimensional concept, which was later validated in Qiu (2017) and Xu et al.'s (2018) studies. Considering the context of the present research (a Chinese wetland national park) and the empirical support of prior studies in the same context, this study adopts Fan et al.'s (2014) scale and regards TERB as a one-dimensional construct.

Hypotheses development

Drawing upon this review of key variables and adopting SOR as its theoretical foundation, an integrative model was developed to explain the influence of destination source credibility on TERB through cognitive and affective images, and place attachment.

Relationships between stimulus and organism: The information and contents created by suppliers, travelers, and residents exert considerable influence on destination image. According to signaling theory, when people consider the information from a destination as credible, this stimulating factor is likely to exert a persuasive influence on their estimations about destination

image. Previous studies have suggested a positive association between destination source credibility and destination image (Kani et al., 2017; Veasna et al., 2013). These earlier studies however either considered destination image as cognitive image or treated destination image as a unified latent variable, failing to test the influence of destination source credibility on the affective images. Loureiro (2017) observed a positive effect of credibility on feelings of pleasure in medical tourism. Therefore, destination source credibility is taken as the stimulus, which influences cognitive image and affective image. The following hypotheses were proposed:

H₁. Destination source credibility has a positive and direct influence on cognitive image.

H₂. Destination source credibility has a positive and direct influence on affective image.

Credibility was found to be a significant antecedent in banking services (Aldlaigan & Buttle, 2005) and retail (Louis & Lombart, 2010). The positive link has also been observed in tourism. Veasna et al. (2013) determined that tourists tend to be attached to specific destinations when the destination sources are considered as credible. Considering the affective features of place attachment, this study posits that destination source credibility can be recognized as the stimulus, which positively affects place attachment, and the following hypothesis was proposed:

H₃. Destination source credibility has a positive and direct influence on place attachment.

Relationships among organisms: There is an ongoing debate on whether cognition precedes emotion, or vice versa (Fu et al., 2016). Some suggest that higher levels of affection trigger greater positive cognitive evaluations of a specific place's attributes (e.g., Rollero & Piccoli, 2010), while others believe cognitive activity elicits a variety of emotional responses (e.g., Baloglu & McCleary, 1999). Even so, there is agreement that certain perceptions lead to emotional arousal. The distinction between cognitive and affective images in tourism is a conceptual and methodological distinction that promotes careful examination of destination image (Stylidis, Shani, & Belhassen, 2017). It is demonstrated that cognitive image is a predictor of affective image (e.g., Chiu et al., 2014; Fu et al., 2016). In accordance with prior research findings, the following hypothesis was proposed:

H₄. Cognitive image has a positive and direct influence on affective image.

In exploring the predictors of place attachment, Cheng et al. (2013) showed that

perceptions of destination attractiveness directly influences place attachment. The perception of a destination's attractiveness derives from perceived destination image (Hou, Lin, & Morais, 2005). Destination image is believed to be able to impact place attachment. Veasna et al. (2013) and Lee et al. (2019) confirmed destination image's influences on place attachment, although they only assessed the cognitive component. Also, Hosany et al. (2017) discovered a positive link between emotions and place attachment. Few studies have integrated the two destination image components into a single model and explored their effects on place attachment (Fan et al., 2014). This research considered both components and proposed the following hypotheses:

H₅. Cognitive image has a positive and direct influence on place attachment.

H₆. Affective image has a positive and direct influence on place attachment.

Relationships between organism and response: The positive influence of destination image on behavior has been widely researched. The relationship between destination image and TERB, however, is rarely explored. Fan et al. (2014) indicated that positive cognitive and affective images acquired through experiences advance tourists' appreciation and understanding of destination environments and foster TERB. A similar assertion is also made by Chiu et al. (2014) and Su and Swanson (2017) reported that positive emotions toward destinations contribute to TERB. Accordingly, the current investigation advanced the following research hypotheses:

H₇. Cognitive image has a positive and direct influence on TERB.

H₈. Affective image has a positive and direct influence on TERB.

Social and environmental psychologists have suggested the positive effect of place attachment on environmentally responsible behavior across a range of contexts (e.g., Gosling & Williams, 2010). Recent tourism studies reveal similar findings. Lee (2011) and Ramkissoon et al. (2013) suggested that once place attachment towards a particular destination or enterprise is formed, tourists are more sensitive to contemporary environmental issues and tend to be more environmentally friendly. Based on this past research, the following hypothesis was specified:

H₉. Place attachment has a positive and direct influence on TERB.

Relationships between stimulus and response: Credible information serves an important role in environmentally responsible behavior decisions (Sarabia-Sánchez, Rodríguez-Sánchez,

& Hyder, 2014). Rahbar and Wahid (2011) found that green advertising's low credibility is a factor leading to limited green purchase behavior of consumers. Carrete et al. (2012) found credibility to be one of the key themes related to uncertainty in the adoption of green consumer behavior. Although the significance of credibility is recognized, the research team is not aware of any study that has explicitly determined the relationship of destination source credibility and TERB, therefore making testing the direct effect of destination source credibility on TERB timely. The following hypothesis was proposed:

H₁₀. Destination source credibility has a positive and direct influence on TERB.

The mediating effect of destination image has been explored by a number of studies. For instance, Prayag and Ryan (2012) reported that destination image mediates the influence of personal involvement on tourist loyalty through place attachment. Veasna et al. (2013) found that the effect of destination source credibility on place attachment is indirectly influenced via destination image. These studies assessed the mediating effect of the cognitive component of destination image, while overlooking the potential mediating role of the affective images. Chiu et al. (2014) identified the mediating effect of affective image between cognitive image and TERB. Su and Swanson (2017) highlighted the mediating role of positive emotions. Despite the aforementioned studies, the mediating effect of cognitive and affective images on the relationship between destination source credibility and TERB has not yet been explored. Applying SOR, the research team speculated both dimensions of destination image could play mediating roles between destination source credibility and TERB.

Place attachment is also identified as a mediator between exogenous and endogenous variables. For example, Cheng et al. (2013) indicated that TERB is indirectly influenced by destination attractiveness via the mediation of place attachment. Fan et al. (2014) demonstrated that place attachment mediates the effect of destination image on TERB. Hosany et al. (2017) found that positive emotions are mediated by place attachment in forming TERB. Yet, research on the mediating effect of place attachment on the relationship between destination source credibility and TERB is still scant. As discussed earlier, it is assumed that the influence of destination source credibility on TERB is mediated via place attachment according to SOR.

This research took cognitive image as the starting point of the mediation that induces affective image, and leads to place attachment. The CI→AI→PA sequence is proposed in the

conceptual model. The proposed relationships constitute a multi-mediator model wherein cognitive image, affective image, and place attachment have direct effects on TERB, but may also mediate the relationship between destination source credibility and TERB. Thus, the indirect effects of cognitive image, affective image, and place attachment should also be investigated, especially considering that the most important type of effect for estimating mediation in SEM is the specific indirect effect (Preacher & Hayes, 2008; Zhao, Lynch, & Chen 2010). Taken together, the following research hypotheses were put forward:

H₁₁. Destination source credibility has a positive and indirect influence on TERB through cognitive image.

H₁₂. Destination source credibility has a positive and indirect influence on TERB through cognitive image and affective image.

H₁₃. Destination source credibility has a positive and indirect influence on TERB through cognitive image and place attachment.

H₁₄. Destination source credibility has a positive and indirect influence on TERB through cognitive image, affective image, and place attachment.

H₁₅. Destination source credibility has a positive and indirect influence on TERB through affective image.

H₁₆. Destination source credibility has a positive and indirect influence on TERB through affective image and place attachment.

H₁₇. Destination source credibility has a positive and indirect influence on TERB through place attachment.

Conceptual model

Based on the ten hypotheses for direct and seven hypotheses for indirect effects, a conceptual model was developed, comprising five key variables (Figure 1). In this serial multiple mediator model, it is proposed that destination source credibility not only has a direct effect on environmentally responsible behavior, but also exerts an indirect effect through cognitive image, affective image, and place attachment.

[Insert Figure 1 here]

Methodology

Measurement of constructs

Multi-item scales were used to measure each construct. Validated scales from previous research were identified and modified to suit the study setting. Table 1 presents the detailed scales and their sources. The reliability and validity of these scales have been widely verified in previous research. Most of the items were measured based on a 5-point Likert scales, anchored by “strongly disagree” (1) and “strongly agree” (5). Affective image was the only variable measured on a five-point semantic differential scale.

[Insert Table 1 here]

Pretest of measurements

The survey was conducted in Chinese. Translation and back-translation between English and Chinese were used to enhance the quality of the survey. Prior to the formal data collection, a pre-test of the measurement items was conducted. Three tourism researchers and five experienced tourists formed an expert panel to check the content validity of the survey. In addition, a pilot test was performed with a convenience sample of 60 tourists who visited the study site. They were invited to respond to all indicators and provide feedback regarding any issues with the scale. The reliability check via Cronbach's Alpha (all > 0.7) and validity through standard factor loading (all > 0.5) indicated acceptable reliability and validity.

Data collection and respondent characteristics

Data was collected in Xixi National Wetland Park, a national AAAAA scenic attraction in Hangzhou, China in March and June 2017. Hangzhou is one of the most popular destinations in China, attracting 184.03 million tourists in 2018. The wetland park is China's first and only National Wetland Park, combining urban, farming, and cultural wetlands. Due to the influence of popular films (especially *If You Are the One* shot in 2008), the park is a must-visit site for many visiting Hangzhou. In 2017, the 10.08 square kilometer park welcomed over 4.25 million tourists, most of whom were domestic Chinese. These visitors were the respondents for this study.

A purposive sampling procedure technique was adopted. Four trained research assistants

from a local university helped administer the survey by standing at four main exits and approaching visitors. Only domestic tourists and those who were willing to participate were given the self-administered questionnaire. The process was closely supervised and monitored by the principal researcher. Five hundred respondents participated in the study with 451 questionnaires properly completed, resulting in a 90.2% response rate. Table 2 presents the profile of the respondents.

[Insert Table 2 here]

Prior to the formal data analyses, the data set was assessed for normality. All indicator values varied from -1 to +1, which indicated that the data met the skewness and kurtosis requirements (Hair, Black, Babin, & Anderson, 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 data were multivariate normal (HZ = 1.0023, $p = 0.4991$). Accordingly, the data in this study was appropriate for further analysis by AMOS.

Results

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 reported on the existence of a multi-factor structure. The first factor accounted for only 40.3% of the total variance (69.1%), indicating that CMV did not appear to be a pervasive issue (Podsakoff & Organ, 1986). Confirmatory factor analysis (CFA) was employed to verify whether a single factor accounted for all of the variance in the data (Nunkoo, Ribeiro, Sunnassee, & Gursoy, 2018). The proposed measurement model fit significantly better than the common factor model ($\Delta\chi^2 = 1942.086$, $\Delta df = 12$, $p < 0.001$), showing that CMV was not an issue for the current research.

Measurement model test

Before testing the proposed hypotheses using SEM, a CFA was conducted to assess the reliability and validity of the constructs and to evaluate the model fit for the measurement model. A series of results (TLI = 0.926, CFI = 0.934, SRMR = 0.050, and RMSEA =

0.057) suggested that the measurement model was a good fit to the data. The composite reliability values ranged from 0.827 to 0.896 (Table 3), indicating the internal reliability of the measurement model was acceptable. In addition, two types of construct validity measures, including convergent and discriminant validity, were assessed. Place attachment was regarded as a second-order construct, including place dependence ($\beta = 0.791, p < 0.001$) and place identity ($\beta = 0.887, p < 0.001$). The values of standard factor loadings, average variance extracted (AVE) and Cronbach's alpha of each construct suggested high convergent validity (Hair et al., 2009). Discriminant validity was calculated by comparing the square root of each construct's AVE with the correlations between pairs of latent variables (Hair et al. 2009). Strong evidence of discriminant validity was observed (Table 4). These results revealed that the measurement model was both reliable and valid. Further hypothesis testing of the structural model was then justified.

[Insert Tables 3 and 4 here]

Structural model test

The hypothesized relationships were evaluated using SEM. Table 5 and Figure 2 present the standardized coefficient estimates and corresponding t-values. The values of the analysis ($\chi^2 [312] = 769.820, p = 0.000, TLI = 0.926, CFI = 0.934, SRMR = 0.050, \text{ and } RMSEA = 0.057$) showed that the goodness-of-fit indices of the structural model fit the data well. The findings provided support for all hypothesized direct relationships except for H₇ and H₈ (Table 5).

[Insert Table 5 here]

[Insert Figure 2 here]

Explanatory power of model

The explanatory power of the model is estimated by the R² of its major endogenous variables (Cohen, 1988). R² values of 0.25, 0.09, and 0.01 are the threshold values to indicate large, medium, and small effects, respectively. The findings from the squared multiple correlations (SMC = R²) showed that the structural model explained 39.9%, 48.7%, 57.1%, and 54.9% of the variance for cognitive image, affective image, place attachment, and TERB, respectively.

These results reveal indicated the model possessed sufficient explanatory power. The large effects of the endogenous variables are captured in the model.

Mediating effects test

The relationship between destination source credibility and TERB was hypothesized to be partially mediated by cognitive image, affective image, and place attachment. To test the significance of indirect effects, a combination of bootstrapping and Bayesian approaches was used. While it is common to employ p-values in tourism research, recent studies suggest using bootstrapping and Bayesian approaches (Assaf & Tsionas, 2018; Feinberg, 2012). Bootstrapping is a powerful statistical approach (MacKinnon, Lockwood, & Williams, 2004), which is especially suitable to test intervening variable effects as it does not impose the assumption of normality of the sampling distribution (Preacher & Hayes, 2008). The Bayesian method for analyzing mediation effects has similar advantages as those for bootstrapping (Yuan & MacKinnon, 2009). Using both bootstrapping and Bayesian approaches to test for mediating effects is a type of methodological triangulation, which ensures the validity of the analysis.

The number of bootstrap sample was set to 5,000, using both percentile and bias-corrected confidence intervals of 95% (hereafter referred to as PCI and BCI). The bootstrapping approach was created and run to test the specific indirect effects (Table 6). In bootstrapping analysis, the mediation effect is significant if the confidence interval for the indirect effect does not contain zero (Zhao et al., 2010). Hence, a significant specific indirect effect was identified for destination source credibility on TERB via cognitive image and place attachment (PCI: [0.013, 0.114]; BCI: [0.015, 0.12]), providing support for H₁₃. Similarly, H₁₄, H₁₆, and H₁₇ were confirmed. However, the mediating effect for CI between destination source credibility and TERB was not significant (PCI: [-0.02, 0.145]; BCI: [-0.021, 0.143]), thus not supporting H₁₁. Likewise, H₁₂ and H₁₅ were not supported.

The custom-estimands option in the Bayesian estimation procedure with Markov chain Monte Carlo (MCMC) simulation techniques in AMOS (Arbuckle, 2009) was also undertaken to test the mediating effect. The analysis produced identical results to the bootstrapping approach (Table 6).

[Insert Table 6 here]

To further explore the relative importance of the significant indirect effects between destination source credibility and TERB, pairwise contrasts of these effects were conducted. The magnitude of the DSC→PA→TERB path was significantly different from the DSC→CI→PA→TERB path (PCI: [-0.224, -0.023]; BCI: [-0.233, -0.028]; Bayesian: [-0.221, -0.03]). Likewise, the DSC→PA→TERB path and the DSC→CI→AI→PA→TERB path had significant differences. Similarly, the DSC→PA→TERB path was significantly stronger than the DSC→AI→PA→TERB path. However, by comparing the paths among the DSC→CI→PA→TERB path, the DSC→CI→AI→PA→TERB path, and the DSC→AI→PA→TERB path, there were no significant differences due to the 95% confidence intervals including zero (Table 7).

[Insert Table 7 here]

Discussion, conclusions and implications

Conclusions

The contribution of TERB to a destination's sustainability and the necessity to understand its antecedents provided the motivation for this research. Stimulus-organism-response (SOR) theory was adopted to develop a conceptual framework with 17 hypotheses, delineating the direct and indirect antecedents of TERB. Destination source credibility was considered as the stimulus, destination image (cognitive and affective) and place attachment as the organisms, and TERB as the response. Empirical data were collected through a questionnaire-based survey in a popular Chinese National Wetland Park. SEM was used to assess the model structure and test the hypotheses. A serial multiple mediator model of the dynamic relationships among destination source credibility, destination image, place attachment, and TERB was tested through a combination of bootstrapping and Bayesian method. The results supported the majority of the research hypotheses.

Destination source credibility was indispensable for the development of cognitive image and place attachment, which supported the existing literature (Veasna et al., 2013; Kani et al., 2017). The direct association between destination source credibility and affective image was also identified, similar to prior literature reporting a positive link between destination source credibility and positive emotions (Loureiro, 2017). In line with previous studies in green

consumer behavior (Carrete et al., 2012; Rahbar & Wahid, 2011), the direct influence of destination source credibility on TERB was determined.

Destination image was conceptualized as a two-dimensional concept (cognitive and affective). Consistent with previous studies (Chiu et al., 2014; Prayag & Ryan, 2012), the view that cognitive image has a positive direct effect on affective image and place attachment was reinforced. It is worth noting that cognitive image did not have a significant direct impact on TERB. Rather, it exerted its influence through affective image and place attachment. This finding provides valuable insights into the CI→AI→TERB sequence suggested by Chiu et al. (2014). In addition, the prediction of a relationship between affective image and place attachment was supported. This positive link was also observed in Fan et al. (2014) and Hosany et al.'s (2017) work. Further, place attachment was significantly and positively associated with TERB, supporting Cheng et al.'s (2013) and Lee's (2011) earlier works. In summary, although affective image did not directly influence TERB, the relationship was mediated by place attachment.

In addition to the direct effects, the indirect effects among the variables were tested through a combination of the bootstrapping and Bayesian approaches. The analysis supported four specific indirect relationships: DSC→CI→AI→PA→TERB, DSC→CI→PA→TERB, DSC→AI→PA→TERB, and DSC→PA→TERB. However, the other three proposed indirect relationships were not supported. The findings implied that unless place attachment is formed, neither cognitive nor affective images will increase TERB. A pairwise contrast of the specific significant indirect effects was conducted and provided evidence of the importance of place attachment. The analysis indicated that place attachment, when compared to cognitive and affective images, was the most important mediating variable between destination source credibility and TERB. Place attachment served as a vital intervening role in generating TERB, a finding supporting the sequence of cognitive appraisal → affective response → behavioral response suggested by Chen and Phou (2013) in a destination context. It also extended the current scholarly work by building and confirming the DSC→CI→AI→PA→TERB sequence.

Theoretical implications

Building upon the key concepts advanced in previous studies, this research extends the existing work in four notable ways generating unique theoretical implications. First, this represents the first attempt to assess the effects of destination source credibility on TERB. The empirical support for a significant impact of destination source credibility on TERB advances studies on source credibility and environmentally responsible behavior (e.g., Carrete et al., 2012) through its application to destinations, a non-residential context.

Second, while SOR has been adopted to understand online hotel booking, loyalty, and other related topics in tourism (e.g., Baek & Ok, 2017; Loureiro et al., 2013), this research is one of the few studies to apply SOR to TERB research (Su et al., 2020). It empirically tested the suitability of SOR in investigating the internal factors driving TERB. The results provide empirical evidence that destination source credibility serves as a preceding stimulus that influences destination image and place attachment (organisms) which then activate TERB (response). As such, the findings extend the application of SOR especially within the tourism context.

Third, this study adds to the current literature by examining destination image and place attachment as mediators of the impact of destination source credibility on TERB. To the researchers' best knowledge, no previous studies have considered the link between destination source credibility and TERB, nor is there empirical evidence for the mediating role of any intervening variables in the association. Therefore, this study is innovative and contributes to the existing body of knowledge in two ways. One lies in its investigation of the indirect effects of destination source credibility on TERB via destination image and place attachment. Four significant indirect paths are identified through which destination source credibility influences TERB: $DSC \rightarrow CI \rightarrow PA \rightarrow TERB$; $DSC \rightarrow CI \rightarrow AI \rightarrow PA \rightarrow TERB$; $DSC \rightarrow AI \rightarrow PA \rightarrow TERB$; and $DSC \rightarrow PA \rightarrow TERB$. These results indicate that the indirect effects of destination source credibility on TERB are recognized via the mediating effects of destination image and place attachment. This lends empirical evidence to support the causal link of $DSC \rightarrow CI \rightarrow AI \rightarrow PA \rightarrow TERB$. The sequence provides insights into the underlying relationship between destination source credibility and TERB, making this a useful addition to the existing literature. Moreover, benchmarking the influences of cognitive image, affective image, and place attachment within the relationship between destination source credibility and TERB is insightful. The

comparative importance of the four significant indirect paths are explained in a serial multiple mediator model, providing a comprehensive view to help better understand the relationships among destination source credibility, cognitive image, affective image, place attachment, and TERB. For example, compared to other mediators, place attachment was found to be the most important intervening variable between destination source credibility and TERB.

Fourth, this research offers a methodological contribution to the current tourism literature by combining the bootstrapping and Bayesian approaches for the mediation analysis. The past few years have witnessed an increasing number of tourism studies employing the bootstrapping method for testing mediation effects (e.g., Hosany et al., 2017). However, the Bayesian approach has not been used to its full advantage (Assaf, Tsionas, & Oh, 2018). This investigation responded to previous calls for using the Bayesian approach in tourism studies (Assaf & Tsionas, 2018). The results of the Bayesian test for indirect effects were in line with the results of the bootstrapping test. Such a combination of methods strengthens validity by comparing the respective results and makes a pioneering methodological attempt by performing specific mediation analysis via multiple methods.

Practical implications

The findings are potentially meaningful for the tourism sector, especially for sustainable destination management. The results pinpointed the critical role of destination source credibility in predicting cognitive and affective images, place attachment and TERB. That is, the promotion of destination source credibility can be an effective tool to generate higher levels of TERB within destinations. Destination management organizations (DMOs) must create and deliver credible information. Various signals of credibility should be contemplated. Xixi National Wetland Park has several strategies to enhance perceived credibility. For example, the prices of tickets, various services, and souvenirs are all clearly marked. Considering the crowding issue at many Chinese tourism attractions, tourist flow information is shared with on-site visitors and potential visitors through smart technologies so that they can better manage their schedules and have more pleasant experiences. Also, volunteers and staff are always available if people need any help or encounter unfair treatment. Through these approaches, the

Wetland Park demonstrates its destination source credibility.

The serial multiple mediator model confirmed the DSC→CI→PA→TERB sequence and DSC→CI→AI→PA→TERB sequences, pointing to cognitive image as an influential mediator. Shaping and reinforcing attractive cognitive images of nature-based destinations should be emphasized. In addition to good planning and daily management, key target market perceptions of destination image should be closely monitored and proactively communicated. When necessary, marketing campaigns should be adjusted to help visitors gain strong impressions of destination attractiveness and create memorable tourist experiences. For example, Xixi updates and communicates its highlights for different seasons and during various festivals through its social media accounts, advertising, and travel agencies to help visitors build more accurate images and expectations of the Wetland Park.

The results highlight the significance of building and cultivating positive affective images. The DSC→CI→AI→PA→TERB and DSC→AI→PA→TERB sequences were supported. In addition to providing credible information and communicating accurate images, destination marketing efforts should focus on how to foster positive affective images. For example, multimedia can be employed during promotion and on-site visits to arouse multi-sensory experiences. Social interactions with tourists can be staged during on-site visits; for example, Xixi has a strong volunteer system which connects the park with the host city of Hangzhou and its many nature lovers. In summary, strategies need to be initiated to make destinations relaxing and of interest since these positive affective images lead to enhanced place attachment and TERB.

The critical role of place attachment was highlighted among all four tested mediating sequences between destination source credibility and environmentally responsible behavior. This research advocates the building and strengthening of long-lasting emotional bonds between visitors and destinations. DMOs are encouraged to cultivate place attachment as a vehicle to enhance TERB. The crucial role of tourists in sustainable tourism development should be emphasized. It is not sufficient for park organizations and other DMOs to only promote beautiful scenery, excellent infrastructure, and high-quality service. The ability to offer positive and pleasant emotional experiences should also be highlighted. Information on

participating in various activities, interacting with hosts, and appreciating unique local ecosystems and cultures should also be provided. In summary, strategies that create deep and meaningful memories, and reinforce affection for specific destinations should be the priority.

The idea that tourists act as custodians and have stewardship of the places they value is crucial from the sustainable tourism viewpoint. Xixi National Wetland Park is a unique nature-based attraction and, in addition to its tourism economic impact, the Park's ecosystem services make a valuable contribution to visitor and nearby resident well-being via the emotional value of nature. Therefore, this research has policy implications for involved government agencies and others. Given the large volumes of visitors to Xixi, more careful consideration needs to be attached to the protection and conservation of the natural environment and cultural-heritage resources within the Wetland Park. For Xixi's tourism to be sustainable, it must be multi-faceted, and requires responsible actions from all involved parties including visitors, tourism stakeholder organizations, and government agencies.

Limitations and future research directions

This investigation had limitations that must be acknowledged. First, like much previous research (e.g., Han & Hyun, 2018), self-reported measurements were used. There are some potential biases related to this approach due to the effects of social desirability and norms. Future research should consider conducting observations of actual TERB, or people's evaluations of others' TERB, to minimize potential biases. Second, a convenience sample of Chinese domestic tourists visiting the National Wetland Park was used. In future research, a more sophisticated sampling process should be adopted. In addition, similar studies can be conducted in other types of tourism attractions, such as cultural sites in China and other countries, to test the robustness of the identified relationships. Finally, the proposed theoretical model based on SOR is open to extension. Additional constructs can be included to extend the theoretical framework. For instance, TERB may differ based on the types of destination information sources used by tourists as well as due to individual differences. Examining how different categories of information sources and demographic characteristics drive TERB will be interesting and meaningful.

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