Journal of Hospitality and Tourism Management 47 (2021) 443–452

Contents lists available at ScienceDirect

Journal of Hospitality and Tourism Management

journal homepage: www.elsevier.com/locate/jhtm

Tourism employee pro-environmental behavior: An integrated multi-level model

Hongmei Zhang [a,*], Xinyue Zhang [a], Billy Bai [b]

[a] Shanghai Institute of Tourism, Shanghai Normal University, PR China
[b] William F. Harrah College of Hospitality at the University of Nevada Las Vegas, USA

ARTICLE INFO

Keywords:
Employee pro-environmental behavior
Environmental knowledge
Environmental risk perception
Environmental CSR perception
Attitude toward environmental CSR
National park goal identification

ABSTRACT

Employee pro-environmental behavior (E-PEB) is a complex phenomenon influenced by various level factors simultaneously. Previous single-level models are not enough to reveal the sophisticated relationships. This study proposes a multi-level model by integrating traditional individual, organizational, relational level constructs and a new proposed situational construct (e. g., national park goal identification). The model is tested in a national park-based tourism firm context. Five hundred ninety-nine employees of tourism firms located in two famous Chinese national parks and their gateway communities were surveyed offline and online. The results reveal that the two relational variables (i.e., national park goal identification and attitude toward environmental CSR) have significant effects on private E-PEB, while the organizational level variable (i.e., environmental CSR perception) significantly affects public E-PEB. This study contributes to E-PEB knowledge by providing a more comprehensive perspective from the multi-level model, especially integrating the national park factor and revealing the different influence mechanisms for private and public E-PEB.

1. Introduction

National parks are an important type of protected area that attracts numerous visitors every year. The environmental protection pressure comes from not only the park visitors but also from the residents and tourism firms in and around the parks. For those tourism firms that depend upon national park resources and visitors, corporate environmental responsibility is crucial for the environmental protection of national parks and firms' existence and sustainable development. Employee pro-environmental behavior (E-PEB) is the manifestation and psychological foundation of corporate environmental responsibility and environmental performance (Gond, El Akremi, Swaen, & Babu, 2017). In recent decades, E-PEB has gained increasing academic attention from organizational behavior, corporate social responsibility (CSR), and human resource management fields, explaining corporate sustainability and environmental performance from the individual level rather than the organizational level (Lülfs & Hahn, 2014). E-PEB has different names or expressions, such as green behavior, organizational environmental citizenship behavior (OCBE), sustainable behavior, ecological behavior, environmentally friendly behaviors, and conserving behaviors. While there are some different definitions for these terms, they have common connotations. This paper adopts the name of E-PEB and defines it as "a workplace-specific form of pro-environmental behavior," "any measurable individual behavior that contributes to or detracts from environmental sustainability goals in the work context" (Norton, Parker, & Zacher, 2015, p. 103).

Although pro-environmental behavior (PEB) has been well examined in individual and household contexts, the result is not easily generalized into organizational context because PEB in an organization or workplace may have different motivations and determinants (Esfandiar, Dowling, Pearce, & Goh, 2020; Lo, Peters, & Kok, 2012; Ramkissoon, Mavondo, & Uysal, 2018). Norton et al. (2015) reviewed 69 publications focusing on employee green behavior (EGB). They organized the factors of EGB into five levels: institution (e.g., regulation), organization (e.g., environmental CSR, green organizational culture), leader (e.g., transformational leadership), team (e.g., perceived colleague support, group climate), and employee (e.g., attitude, motivation). So far, few studies have integrated individual-level and organizational-level determinants to explain E-PEB (Lo et al., 2012; Lülfs & Hahn, 2014; Tudor, Barr, & Gilg, 2007). In Chou (2014)'s study, an organizational-level factor was included in the individual-level model as a moderator. After reviewing empirical studies on PEB in organizational contexts, Lo et al. (2012) recommended that

* Corresponding author.
E-mail addresses: hongmei@shnu.edu.cn (H. Zhang), 791664273@qq.com (X. Zhang), billy.bai@unlv.edu (B. Bai).

https://doi.org/10.1016/j.jhtm.2021.04.014
Received 9 January 2021; Received in revised form 24 March 2021; Accepted 22 April 2021
Available online 5 May 2021

future research integrate individual and organizational determinants.

Scholars in the tourism and hospitality field also examine individual or organizational antecedents of E-PEB separately (Chan, Hon, Okumus, & Chan, 2017; Fatoki, 2019; Nhat, Tuckova, & Jabbour, 2019; Zhang & Huang, 2019). The individual-level antecedents and mediators involve environmental knowledge, awareness, concern, belief, norms, values, commitment, and engagement (Chan et al., 2017; Chou, 2014; Luu, 2019b,c; Zientara & Zamojska, 2018), connectedness to nature, ecological embeddedness (Peng & Lee, 2019; Rezapouraghdam, Alipour, & Darvishmotevali, 2018), and autonomous and controlled motivation (Zhang & Huang, 2019). The organizational-level antecedents and mediators involve leadership behavior, environmentally specific servant leadership and charismatic leadership, green HRM, CSR, institutional support, green organizational climates, and environmental management strategy (Fatoki, 2019; Kim, Kim, Choi, & Phetvaroon, 2019; Luu, 2019a,b; Luu, 2020; Nhat et al., 2019; Su & Swanson, 2019; Yoon, Jang, & Lee, 2016). Besides individual and organizational level factors, the relationship variables between employee and organization are also examined, including employees' organizational commitment, organizational trust, organizational identification, green role identity, workplace spirituality, work ethic, and green crafting (Kim et al., 2019; Luu, 2020; Su & Swanson, 2019; Yoon et al., 2016).

Different from general firms, national park-based tourism firms are located in or around the protected areas. The employees working in natural attractions have more chances to experience nature; therefore, they may have different feelings or connections towards nature than their city counterparts. In addition, they may have higher environmental awareness and pro-environmental behavior because their job is dependent on natural resources. The antecedents of E-PEB in tourism companies directly depending on natural resources may include not only individual and organizational level factors discussed above but also attraction variables. This study introduces "national park goal identification" as a newly constructed particular variable for national park-based tourism firm context. By integrating this new national park factor (i.e., national park goal identification) with other level factors, including individual factors (i.e., environmental knowledge, environmental risk perception), organizational factors (i.e., environmental CSR perception), and relational factors (i.e., attitude towards environmental CSR), this study builds a multi-level model of E-PEB to demonstrate the formation mechanism of E-PEB in a national park-based tourism firm context. Environmental knowledge is an important antecedent of individual PEB (Okumus, Köseoglu, Chan, Hon, & Avci, 2019). However, it is largely ignored in PEB studies in the workplace. Research that integrates environmental knowledge and organizational level variables is notably lacking. Environmental risk perception may influence individual PEB directly or indirectly (Zeng, Jiang, & Yuan, 2020), but no study has explored its influence on E-PEB. Integrating these different level variables will provide a new insight into the formation mechanism of E-PEB.

The contribution of this study includes: (1) The E-PEB model is extended from a single level to a multi-level model by integrating individual, organizational, and relational factors. The multi-level model is necessary since E-PEB is a complex phenomenon with various influence factors. (2) A new situational factor (i.e., national park goal identification) is proposed and introduced into the model. It provides a new perspective of E-PEB from a managerial situation (i.e., national park in this study), especially for nature-based tourism firms. Therefore, the model breaks through the limitation of the individual and organizational boundary by showing a more comprehensive picture. (3) This study first introduces the construct of environmental risk perception into the E-PEB field. (4) The study tests the multi-level model in the Chinese context, in which national park pilot projects have profoundly influenced the environmental awareness of the tourism firms and their employees. Furthermore, the risk culture in China is different from western countries. This advances the body of knowledge from a contextual perspective. (5) The proposed model explains how these different level factors interact with each other and influence E-PEB. The findings give new insight into the different formation mechanisms for public and private E-PEBs that a single-level model could not reveal. Public E-PEB is influenced by organizational level factors, while relational level factors influence private E-PEB. Individual factors have an indirect influence on E-PEB through the mediating effect of organizational and relational level factors. Specifically, environmental knowledge and risk perception influence private E-PEB through the mediating effects of national park goal identification and attitude towards environmental CSR; environmental knowledge influences public E-PEB through the mediating effect of environmental CSR perception.

2. Literature review and theoretical framework

2.1. National park goal identification and E-PEB

According to the Protected Areas Management Categories of the International Union for Conservation of Nature (IUCN), a national park is classified as a Category II protected area. Its management objective is to protect natural biodiversity and its underlying ecological structure, support environmental processes, and promote education and recreation (Dudley, 2008). Since Yellowstone National Park was set up in 1872, it has been recognized as a model for nature conservation and recreational activities. China plans to set up its first national parks in 2020 after five years of pilot programs. The ten pilot national parks include popular tourism attractions, some of which are listed in the World Nature Heritage, World Cultural Heritage, or Man and Biosphere Program lists. Based on rich natural resources and beautiful scenery, these future national parks attract numerous visitors every year. Various tourism firms are set up to provide tourism services for visitors inside the national parks or in the gateway communities. Since the inception of the national park pilot programs, these national park-based tourism firms and their employees have been introduced to national parks' management objectives and relative managerial practices.

The definition and management objectives of national parks have been issued in official documents in China. This up-to-down approach may not ensure every stakeholder agrees with it, especially when the stakeholders have to give up certain benefits. According to social identity theory, previous studies confirmed that CSR improves employee organization identification by enhancing organizational prestige, status, and attractiveness among stakeholders, enhancing employees' self-worth, and meeting their self-enhancement needs (Ashforth & Mael, 1989). Employees with strong organization identification internalize the organizations' values, beliefs, and goals into their self-concepts, leading to various citizen behaviors, including OCBE (Cheema, Afsar, & Javed, 2020; Farooq, Rupp, & Farooq, 2017). In this study, we introduced the concept of national park goal identification. It is defined as "the extent to which individuals align themselves with the national park goal". Following the logic of organizational identification, individuals who identify with the national park goal may enhance self-prestige and self-worth and exhibit behaviors beneficial to national park protection. We assumed that national park-based tourism firm employees who identify with the national park's environmental protection goal would engage in pro-environmental behavior both at the workplace and in their personal lives. Therefore, the following hypothesis is proposed:

H1. National park goal identification has a positive effect on E-PEB.

2.2. Perceived corporate social responsibility and E-PEB

CSR is defined as "context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance" (Aguinis, 2011, p. 855). While most CSR research concentrates on institutional or organizational level, Micro-CSR and perceived CSR focusing on people or individuals had increased attention in recent years

(Afsar & Umrani, 2020; Gond et al., 2017). Perceived CSR is defined as "the evaluations of and personal interpretations of employees of the organization's CSR activities, which can differ from the organization's actual CSR practices" (Afsar & Umrani, 2020, p. 114). Researchers have started to examine the direct and indirect effect of perceived CSR on E-PEB, including tourism and hospitality. The findings indicate that perceived CSR is an important factor influencing E-PEB directly (Cheema et al., 2020; Luu, 2017, 2018) and/or indirectly through organizational identification, organizational trust, environmental orientation fit, moral reflectiveness, environmental commitment, coworker pro-environmental advocacy, green practices, employee well-being, and overall community satisfaction (Afsar & Umrani, 2020; AlSuwaidi, Eid, & Agag, 2021; Cheema et al., 2020; Su, Huang, & Pearce, 2018; Su & Swanson, 2019; Suganthi, 2019). For example, AlSuwaidi et al. (2021) reported that CSR is a major driver of employee green behavior through employee well-being and personal environmental norms in the hotel context.

An individual's behavior is the function of personal and contextual factors (Lewin, 1951). In regard to the relationship between perceived CSR and E-PEB, CSR is a kind of contextual factor. When employees perceive their organization is involved in CSR and focusing on environmental aspects, they are more likely to engage in PEB (Ruepert, Keizer, & Steg, 2017). While many studies take CSR as a total construct, some studies mainly focus on the relationship between environmental CSR (alone or separative dimension) or corporate environmental responsibility and E-PEB (Cheema et al., 2020; Glavas & Kelley, 2014; Islam, Ali, & Asad, 2019; Ruepert et al., 2017). For example, Islam et al. (2019) investigated environmental CSR and organizational identification as the predictors of E-PEB through the moderating effect of empathy in the hotel sector. One main aim of the above studies is to investigate the underlying mechanisms explaining why CSR influences E-PEB. Therefore, in their models, CSR or environmental CSR is often antecedent, and E-PEB is outcome while some mediators and moderators are introduced to explain internal and external mechanisms. In general, research exploring CSR and E-PEB's relationship is still in its infancy. According to previous research in other fields, this study extends the context to national park-based tourism firm and posits that employees' environmental CSR perceptions affect their E-PEBs because the firm's CSR practices create an influential culture. Thus, the following hypothesis is formulated:

H2. Environmental CSR perception has a positive influence on E-PEB.

Turker (2009) proposed a four-dimension CSR structure based on stakeholders, namely CSR to social and non-social stakeholders, CSR to employees, CSR to customers, and CSR to government, where environmental CSR falls under the dimension of CSR to social and non-social stakeholders. In his study, the moderating effect of employees' beliefs on CSR's importance on the relationship between four CSRs and organizational commitment was examined. The results failed to confirm the moderating effect of CSR's importance in general; only a small effect was found on the relationship between CSR to social and nonsocial stakeholders and organizational commitment.

In this study, we propose a concept of employee attitude toward environmental CSR based on the theory of planned behavior (TPB) and CSR's importance, which refers to the employee's evaluations of the necessity and importance of organization engaging in environmental CSR. According to the TPB, attitude is an essential antecedent of behavioral intention. If employees think their organization should engage in environmental CSR, they may more probably act in a pro-environmental way by themselves because they belong to the organization. This notion is also consistent with the theory of cognitive consistency (Festinger, 1957). Based on this theory, the frustration of cognitive consistency needs would engender distress. To avoid distress, people would make an effort to keep attitude and behavior consistency. This is also in line with the concept of person-organization fit (Cheema et al., 2020; Luu, 2019c; Zientara & Zamojska, 2018). Cheema et al. (2020) found that environmental orientation fit between employee and organization significantly affected organizational citizenship behavior for the environment (OCBE). Luu (2019c) found that person-group fit enhanced the effect of environmentally specific servant leadership on employee OCBE. Therefore, we put forward the following hypothesis:

H3. Employee attitude toward environmental CSR has a positive effect on E-PEB.

2.3. Environmental knowledge and E-PEB

The relationship between environmental attitude (values, concern, awareness, beliefs, and knowledge) and pro-environmental behavior has been well-explored in individual and household contexts, especially by psychologists (Kaiser, Wölfing, & Fuhrer, 1999). In this paper, we choose environmental knowledge as an individual factor of E-PEB. Compared with environmental values and concerns, environmental knowledge is a more dynamic variable. It can be improved during a short period through environmental education. If environmental knowledge is proved to have a direct or indirect influence on P-PEB, it would have greater practical significance for the firms' environmental management and national park protection.

Fryxell and Lo (2003) defined environmental knowledge as "a general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems" (p. 48). Knowledge is a precondition of any attitude formation and decision-making (Chan, Hon, Chan, & Okumus, 2014; Kaiser et al., 1999; Kaplan, 1991; Okumus et al., 2019). Therefore, when lacking environmental knowledge, it is difficult for individuals to be conscious of the environmental issues and the environmental consequences of their behaviors. Environmental knowledge has been proved as an antecedent of ecological behavior in several studies. For example, Okumus et al. (2019) examined the impacts of three environmental attitude variables (knowledge, awareness, and concern) on employees' ecological behavior in a hotel context. The findings showed environmental knowledge significantly affected ecological behavior and employees' intention to implement green practices. Chan et al. (2014) found that the same three environmental attitude variables had significantly affected employees' intention to implement green practices through the mediating effect of ecological behavior. The above two studies presented two different kinds of E-PEB. Ecological behavior was personal or private actions, while intention to implement green practices was public actions. Fryxell and Lo (2003) revealed that environmental knowledge and values affected Chinese managers' personal behavior more than overt behavior.

Of the limited studies on E-PEB, most of them examined the direct effect of environmental knowledge on E-PEB in the workplace (Chan et al., 2014; Okumus et al., 2019). However, few studies focused on the indirect influence on ecological behavioral intention through other mediators such as environmental awareness and concern (Chan et al., 2017). No reported study has investigated the mediation effect of organizational level variables such as CSR between individual employees' environmental knowledge and PEB.

This study assumes that environmental knowledge indirectly influences E-PEB through environmental CSR perception, employees' attitude toward environmental CSR, and national park goal identification. Information and knowledge are the preconditions of attitude formation (Kaplan, 1991). The employees with comprehensive knowledge about the natural environmental process and human-environmental interaction would be more inclined to form pro-environmental attitudes and engage in more PEBs. In the present study, the pro-environmental attitudes include employees' attitudes toward environmental CSR and national park goal identification. Therefore, we posit that environmental knowledge significantly impacts employees' attitudes toward environmental CSR and national park goal identification. In addition, according to perceptual selectivity characteristics in the individual cognitive process, only a small part of the stimulus could be

perceived and further processed. Individuals' knowledge and experience are important factors influencing the selection of perceptual objects. Therefore, the employees with more environmental knowledge may pay more attention to organizational environmental CSR, further forming stronger environmental CSR perceptions. Based on the above discussion, the following hypotheses are proposed:

H4. Environmental knowledge has a positive effect on national park goal identification (a), environmental CSR perception (b), and employees' attitudes toward environmental CSR (c).

Based on the above discussion about H4, employees' environmental knowledge works as a precondition of their attitudes toward environmental CSR and national park protection goals and their perception of environmental CSR. Employees' attitudes and perceptions of environmental protection are direct determinants of their PEB. The causal chain from environmental knowledge to three mediating variables, then to E-PEB reveals the mechanism of how individual level knowledge influences individual E-PEB through organizational and relational level variables. As proposed by Norton et al. (2015), organizational level variables are viewed as moderating or mediating variables between personal factors and EGB. The present study will empirically test the mediating role of organizational and relational level variables between environmental knowledge and E-PEB in national park-based tourism firms. Therefore, the following hypotheses are proposed:

H5. Environmental knowledge has an indirect effect on E-PEB through the mediating roles of national park goal identification (a), environmental CSR perception (b), and attitude toward environmental CSR (c).

2.4. Environmental risk perception and E-PEB

Risk perception is a subjective judgment regarding the characteristics and severity of risk influenced by individual characteristics, as well as cultural and socioeconomic factors (Slovic, 1987; Xu, Feng, Li, Chen, & Jia, 2017). High environmental risk (e.g., air pollution) could lead to severe physical, health, social, and economic threats and negative consequences to human society (Yu, Chang, Chang, & Yu, 2019). Therefore, environmental risk perception may be an important factor in encouraging individual PEB. However, previous studies examining the influence of environmental risk perception on PEB obtained mixed results (Zeng et al., 2020). Zeng et al. (2020) revealed that cultural bias influenced environmental risk perception and pro-environmental behavior, while risk perception mediated the relationship between risk culture and pro-environmental behavior. This finding indicated that environmental risk perception had a direct influence on PEB. In addition, Yu et al. (2019) pointed out that risk perception and place attachment had an indirect effect on PEB through the mediating role of social norms after comparing four competitive models.

To our knowledge, no study has examined the influence of environmental risk perception on E-PEB in an organizational context. In this study, environmental risk perception is viewed as an individual level factor influencing E-PEB indirectly through national park goal identification, environmental CSR perception, and employees' attitude toward environmental CSR. If employees feel high environmental risk, they may think their organization should undertake the responsibility to reduce the risk. In other words, environmental risk perception leads to a positive employees' attitude toward environmental CSR. Similarly, employees with high environmental risk perception would identify more with national parks' goals because the objective is to protect the ecological environment and reduce environmental risk. Meanwhile, the employees with high environmental risk may be more concerned about whether their organizations have taken environmental CSR, thus having a stronger perception of environmental CSR practices. Therefore, the following hypothesis is formulated:

H6. Environmental risk perception has a positive effect on national park goal identification (a), environmental CSR perception (b), and employees' attitude toward environmental CSR (c).

In an organizational context, individual and organizational factors influence E-PEB together. Individual factors such as environmental risk perception and environmental knowledge of employees often take effects on E-PEB through organizational, relational, and situational factors. Namely, individual factors are antecedents and original variables. These individual differences would shape the different attitudes and perceptions of organizational practices, further influencing individual behaviors. In this study, we assume that environmental risk perception will indirectly influence E-PEB. Thus, the following hypothesis is proposed:

H7. Environmental risk perception has an indirect effect on E-PEB through the mediating role of national park goal identification (a), environmental CSR perception (b), and attitude toward environmental CSR (c).

The conceptual framework and hypotheses are illustrated in Fig. 1.

3. Methodology

3.1. Participants and procedures

The participants of this study were employees in national park-based tourism firms. Huangshan and Wuyishan National Parks were chosen because they are popular tourist attractions in China, where many tourism firms are established to provide travel, accommodation, catering, transportation, shopping, and other tourism services. These firms range from small and micro businesses to listed companies. The data was collected through both online and offline surveys. An online survey was conducted on Wenjuanxing, a popular survey platform in China, which has released over 900 million questionnaires since 2006. The survey link was sent to Huangshan Tourism Development Co. Ltd. and Wuyishan Tourism Group, whose employees were asked to answer the questionnaire on the firms' WeChat. The employees answered the questionnaire voluntarily without any monetary incentives. The offline survey was administered in Huangshan National Park, mainly collecting data from small and medium businesses in three central gateway communities. Five master's and doctoral students conducted the offline survey from door to door in the neighborhoods in August 2020. Some houses with closed doors were skipped. A total of 273 online and 330 offline questionnaires were collected. Among the online questionnaires, 28 were removed because the answer time was less than 2 min. Regarding the offline questionnaires, 17 were removed because of the same or missing values. A final sample of 559 (246 online and 313 offline) questionnaires was obtained for subsequent analyses. Since the surveys were used for different sized firms, the demographic distribution was not consistent. The online sample had more respondents who reported as female, married, young, and with higher education levels. Compared with their answers on the main constructs, 16 out of 44 items had significant differences. This study did not aim to exam the differences. Merging the online and offline sample could provide more broad employee respondents for the model test. However, the limitation should be noticed.

Among the sample, 48.7% were male, and 51.3% were female. Most of the respondents were 30–40 years old (36.7%), followed by 25–30 (24.2%) and 40–50 (20.3%). Most respondents' education level was high school or less (38.4%), while 31.4% had a diploma, 25.6% had a bachelor's degree, and 4.7% had a graduate degree. Tourism is a labor-intensive industry which provides more job opportunities for female and low education level workers, especially in rural area (Ling, Wu, Park, Shu, & Morrison, 2013). The sample structure reflected this characteristic. Approximately 31.2% of the respondents worked in small businesses with less than ten employees, 31.2% worked in big firms with over 300 employees, and 16.5% were from businesses with 11–50 employees, 11.1% were from businesses with 51–100 employees, and 10% were from businesses with 101–300 employees. About 22.5% of the respondents came from the accommodation business, 40.8% from firms

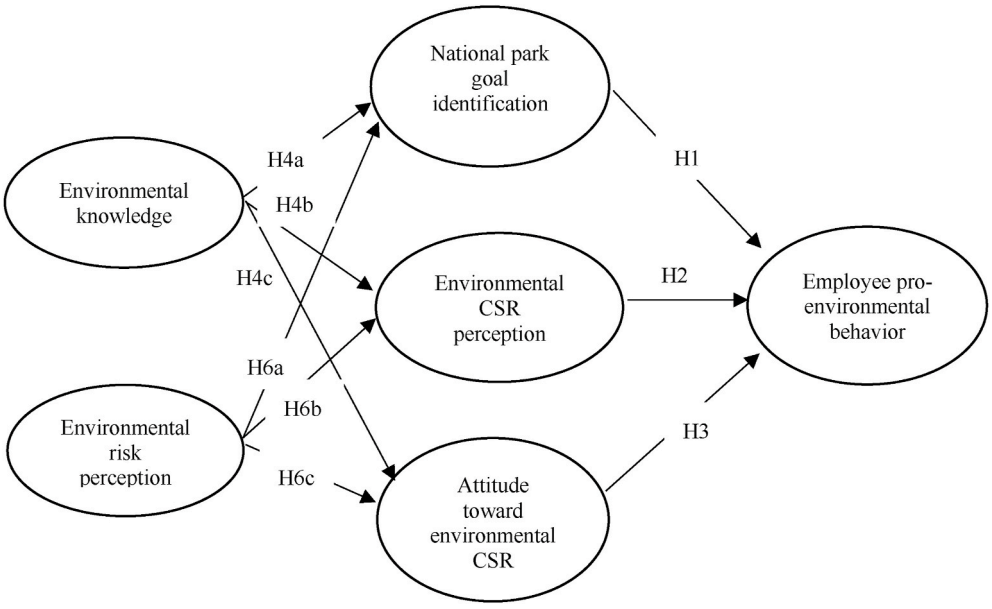

Fig. 1. The conceptual model of this study.

with diversified businesses, 15.2% from restaurants, 9.8% from retail, and 8.9% from attractions. Regarding the job position, 48.4% of the respondents were general staff, 15.8% first-line managers and small business owners, 14.3% middle managers, and 5.7% senior managers.

3.2. Measures

A total of six constructs were measured based on our conceptual model, including environmental knowledge, environmental risk perception, environmental CSR perception, attitude toward environmental CSR, national park goal identification, and employee pro-environmental behavior. Environmental knowledge is measured using ten items from Kaiser et al. (1999). The scale measures employees' factual knowledge about the environment. Of them, nine items were expressed in positive form, such as "Melting of the polar ice caps may result in a flooding of shores and islands," and one item was reversely coded, i.e., "The greenhouse effect does not result in the melting of glaciers in central Europe." The environmental risk perception scale was adapted from Xu et al. (2017), including ten items such as air pollution, water pollution, and freshwater shortage. The respondents were asked to rate their perceived severity degree of these environmental risks.

The measures of attitude toward environmental CSR and environmental CSR perception were adapted from Turker (2009) and Cheema et al. (2019). The attitude toward environmental CSR scale consisted of five items reflecting employees' perception of the importance of environmental CSR, e.g., "Being socially responsible is the most important thing a firm can do." The measurement for environmental CSR perception consisted of four items, e.g., "Our company implements special programs to minimize its negative impact on the natural environment." The scale to measure national park goal identification was developed based on the definition and management objectives of national parks claimed by IUCN and the national park system's overall plan established in China. It has four items, e.g., "The objective of setting up national parks is to protect natural and cultural resources and ecological environment." The employee pro-environmental behavior scale included 11 items adapted from Cheema et al. (2019), e.g., "At work, I turn off lights when out of office." All items were measured using a 5-point Likert scale with "1″ being "strongly disagree" or "not serious at all" and "5" "strongly agree" or "extremely serious." Besides the above six constructs, the questionnaire included demographic variables and firm variables, such as gender, age, and firm size. The survey language was in Chinese. The scales adapted from English literature were translated into Chinese by a bilingual author and then discussed with other authors. A pretest was conducted to improve the language suitability for Chinese respondents.

4. Results

4.1. Multivariate normality and common method variance test

Before examining the measurement model, multivariate normality and common method variance were tested. Skewness and kurtosis were used to evaluate the normality of the distribution of all items. The results indicated that all absolute skewness values were less than 2, just with two exceptions, which were slightly above 2. Most absolute kurtosis values were less than 3, with six values slightly higher than 3. Thus, the normal distribution requirement did not deviate substantially (Kline, 1998). Common method bias was evaluated by Harmon's one-factor test approach. All items were grouped for exploratory factor analysis. The results revealed nine factors with Eigenvalues greater than 1, explaining 63.44% of the total variance. The first factor explained only 23.0% of the total variance, which is lower than 50%, showing that the results were not biased by common method variance.

4.2. Measurement model

Environmental risk perception and E-PEB are viewed as multi-dimensional constructs. Firstly, exploratory factor analysis (EFA) was run for environmental risk perception using offline data. The result obtained two factors, explaining 69.8% of the variance. Both factors included five items. The first factor including items such as air pollution and was named "environmental pollution." The second factor, including items such as lack of green space, was named "scarcity of resources." Then confirmatory factor analysis (CFA) was run based on the EFA results using online data. The result showed an ideal fit between the model and the data. The fit indices were appropriate with Goodness-of-Fit (GFI) at 0.93, Incremental Fit Index (IFI) at 0.98, Comparative Fit Index (CFI) at 0.98, $\lambda 2/df$ at 2.63 (less than 5), the Root Mean Square Error of Approximation (RMSEA) at 0.077 (less than 0.08), surpassing the threshold values. All loadings were between 0.73 and 0.88, above the recommended level of 0.60 (Hu & Bentler, 1999).

The same procedure was conducted for E-PEB. During EFA, one item

was deleted for low communality (<0.5) and another one was deleted for cross-loading. The final EFA generated three factors with nine items, explaining 61.2% of the variance. The first factor, named "public sphere E-PEB," included five items, such as "At work, I take part in environmentally friendly programs." The second factor, named "recycling," included two items, such as "I print double-sided whenever possible." The third factor, named "energy saving," included two items, such as "At work, I turn off lights when out of office." The second and third factors belong to the private sphere of E-PEB. However, CFA obtained unsatisfactory results. Some model fit indices did not meet the threshold value requirement, with RMSEA = 0.093, λ2/df > 5. According to the modification indices, two items with low loadings in public E-PEB were deleted. The final model had a good fit with the data (GFI = 0.986, IFI = 0.985, CFI = 0.985, λ^2/df = 2.672, and RMSEA = 0.055).

The overall measurement model was tested by CFA using the whole data, except EK, which was calculated into one indicator by adding the rate scores of ten items. The CFA results indicated that the model fit indices (GFI = 0.906, IFI = 0.927, CFI = 0.926, λ^2/df = 3.208, RMSEA = 0.063) meet the recommended levels. However, for the two items of the factor "recycling," one loading value was too high with 0.95 (i.e., "I print double-sided whenever possible to recycling") (Byrne, 2016). After deleting this item and the factor "recycling", CFA was rerun and obtained a good fit (GFI = 0.909, IFI = 0.931, CFI = 0.9431, λ2/df = 3.362, and RMSEA = 0.065).

The convergent and discriminant validity for each construct was tested (Table 1). The convergent validity was confirmed because all factor loadings were over 0.5 (Hair, Anderson, Tatham, & Black, 1998), and all composite reliability (CR) values were over the 0.7 threshold. The discriminant validity was confirmed by comparing the square root of average variance extracted (AVE) and the correlation coefficients between the constructs. All AVE values (0.55–0.70) were over 0.50, and their square roots were greater than the relative correlation coefficients (Table 2).

4.2.1. Structural model

The results of the structural model test indicated a good fit with the data (GFI = 0.909, IFI = 0.926, CFI = 0.926, λ2/df = 3.315, and RMSEA = 0.064). Fig. 2 shows the outcome of the hypothesis testing. National park goal identification influenced public E-PEB (β = 0.08, p = 0.06) and private E-PEB (energy saving) (β = 0.19, p = 0.000) significantly, so H1 was partially supported. Environmental CSR perception had a significant effect on public E-PEB (β = 0.56, p = 0.000), but no significant effect on private E-PEB (energy saving) (β = 0.01, p = 0.853); therefore, H2 was partially supported. Attitude toward environmental CSR had no significant influence on public E-PEB (β = 0.07, p = 0.295) but had a significant effect on private E-PEB (energy saving) (β = 0.48, p = 0.000). Thus, H3 was partially supported.

Environmental knowledge had significant effects on national park goal identification (β = 0.37, p = 0.000), environmental CSR perception (β = 0.22, p = 0.000, and attitude toward environmental CSR (β = 0.34, p = 0.000). Therefore, H4 was supported. Environmental risk perception significantly influenced attitude toward environmental CSR (β = 0.13, p = 0.008) and national park goal identification (β = 0.15, p = 0.003), so H6a and H6c were supported. However, environmental risk perception had no significant influence on environmental CSR perception (β = 0.06, p = 0.264); thus, H6b was rejected.

The model explained 38% of the variance on public E-PEB and 31% on private E-PEB (energy saving), indicating the model had a good explanation power for E-PEB. Meanwhile, the model also explained 16% of the variance of attitude toward environmental CSR and 19% of national park goal identification. However, the model demonstrated a relatively lower variance (0.06) of environmental CSR perception (Cohen, 1988).

Table 1
Total measurement model test results.

Constructs and Scale Items	Mean	SD	Loading	CR	AVE
Environmental risk perception	3.88	0.78	0.81	0.82	0.69
Environmental pollution	3.71	0.79	0.85		
Scarcity of resources					
National park goal identification	4.21	0.89	0.71	0.86	0.60
National park is an ideal model of protecting ecosystem and natural and cultural resources	4.33 4.28 4.40	0.84 0.88 0.80	0.77 0.80 0.81		
The objective of setting up national parks is to protect natural and cultural resources and ecological environment					
The behaviors negatively influencing resources and environment should be strictly controlled in national parks					
Environment protection is the precondition for other national park functions such as research/education/recreation/community development					
Environmental CSR perception	4.07	0.96	0.80	0.84	0.57
Our firm participates to the activities which aim to protect and improve the quality of the natural environment	3.97 4.19 4.27	1.01 0.83 0.81	0.75 0.69 0.78		
Our firm implements special programs to minimize its negative impact on the natural environment					
Our firm targets a sustainable growth					
Our firm considers to create a better life for the future generations					
Attitude toward environmental CSR	4.37	0.77	0.76	0.86	0.55
Environmental responsibility is critical to the survival of a business enterprise	4.43 4.25 4.29	0.74 0.83 0.83	0.77 0.76 0.74		
Business has an environmental responsibility beyond making profit	4.16	0.85	0.69		
Being environmentally responsible is the most important thing a firm can do					
Environmental responsibility of a firm is essential to its long-term profitability					
The overall effectiveness of a business can be determined to a great extent by the degree to which it is environmental responsible					
Public E-PEB	3.92	0.94	0.76	0.78	0.55
At work, I take part in environmentally friendly programmes	3.74 3.71	1.01 1.06	0.84 0.59		
I suggest new practices that could improve the environmental performance of my organization					
At work, I question practices that are likely to hurt the environment					
private E-PEB (Energy saving)	4.52	0.67	0.84	0.82	0.70
At work, I avoid wasting resources such as electricity or water	4.60	0.67	0.83		
At work, I turn off lights when out of office					

4.3. Multiple mediating effect test

Amos 24.0 was used to test the mediating effects. The bootstrapping with 2000 samples was performed, and bias-corrected confidence intervals at 95% confidence level were estimated (Macho & Ledermann, 2011). The findings indicated that three mediating variables had different influence paths on E-PEB. Environmental knowledge had an indirect effect on public E-PEB through environmental CSR perception

Table 2
The square roots of average variance extracted and correlation coefficients.

	1	2	3	4	5	6
1. Environmental risk perception	**0.83**					
2. National park goal identification	0.25	**0.77**				
3. Environmental CSR perception	0.10	0.45	**0.75**			
4. Attitude toward environmental CSR	0.23	0.59	0.63	**0.74**		
5. Public E-PEB	0.14	0.36	0.63	0.46	**0.74**	
6. Private E-PEB (energy saving)	0.13	0.43	0.37	0.55	0.36	**0.84**

Note: The values in diagonal line are the square roots of AVE.

(effect size = 0.013, p = 0.001), while it indirectly affected private E-PEB through national park goal identification (effect size = 0.006, p = 0.001) and attitude toward environmental CSR (effect size = 0.013, p = 0.001). Therefore, H5 was partially supported. Environmental risk perception had an indirect effect on private E-PEB through national park goal identification (effect size = 0.022, p = 0.005) and attitude toward environmental CSR (effect size = 0.049, p = 0.005). Thus, H7 was partially supported.

5. Conclusions and discussion

Compared with PEB in individual and household contexts, E-PEB may have different influential factors and formation mechanisms in the workplace. Previous E-PEB studies in the tourism and hospitality field usually explored the mechanism from either individual or organizational levels and mainly focused on hotels. This study proposed an integrated model that included individual, organizational, and relational level variables. Additionally, this study considered the natural resources that the tourism firms lived on, which was different from previous studies that only examined the internal factors from employees or their organizations. The finding indicated that the model had a good explanation of power for public E-PEB and private E-PEB.

5.1. Theoretical implications

This study has significant theoretical contributions to the E-PEB literature. First, this study differentiates two kinds of E-PEB, namely, public and private E-PEB. In most previous studies, E-PEB was viewed as a unidimensional construct (e.g., Cheema et al., 2019; Su et al., 2019; Suganthi, 2019). In the present study, we identified two E-PEB factors. One was public E-PEB, whose items were mainly related to organizational environmental practices. The other was private E-PEB (energy saving), and its items were related to employee personal behaviors that employees can control. The employees rated higher scores for private E-PEB (energy saving, mean = 4.56) than for public E-PEB (mean = 3.79).

The findings of this study indicated that the influential factors of public and private E-PEB were different from each other. Public E-PEB was influenced by environmental CSR perception. Both attitudes toward environmental CSR and national park goal identification had no significant influence on public E-PEB. Conversely, private E-PEB was influenced by attitude toward environmental CSR and national park goal identification. However, environmental CSR perception had no significant effect on private E-PEB. The findings revealed the different formation mechanisms of public and private E-PEB when organizational, individual, and relational level variables are considered simultaneously. Environmental CSR perception is an organizational level variable that influences public E-PEB, which is related to organizational environmental practices. Attitude toward environmental CSR and national park goal identification are relational variables reflecting employees' attitudes toward organization and national parks. They mainly influence private E-PEB because private E-PEB is more controlled by employees. These results indicate that the theories of TPB, cognitive consistency, and person-organization fit may have more explanation power for private E-PEB than public E-PEB. Our findings are consistent with Cheema et al. (2020) and Su et al. (2019). They supported that CSR perception positively affected employees' OCBE and green behavior (their operationalizations were similar to public E-PEB). However, our study does not support Islam (2018) and Suganthi (2019), who found CSR perception had a significant effect on E-PEB (its operationalization was similar to private E-PEB).

Second, in this study, national park goal identification is a new concept proposed based on social identity theory. Previous studies paid more attention to organization identification, which significantly affects E-PEB (Cheema et al., 2020; Islam et al., 2019; Su & Swanson, 2019). This study extends the identification concept from inside organization (i.

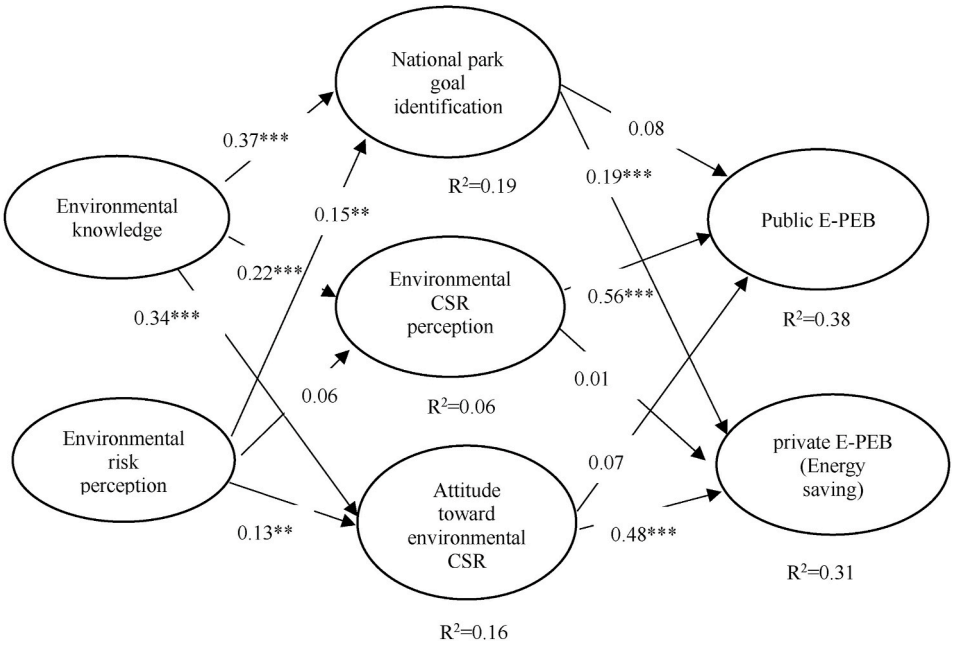

Fig. 2. The structural model results.

e., organization identification) to outside organization (i.e., national park goal identification). National park-based tourism firms are located inside the national park or its gateway communities. The protection of natural landscapes and ecosystems is vital for the sustainability of these firms. As a relational level variable, national park goal identification positively affects private E-PEB in the proposed integrated model but has no significant effect on public E-PEB.

Moreover, environmental knowledge is confirmed as a critical individual-level variable that influences organizational and relational level variables. The findings support the TPB and perceptual selectivity, indicating that factual knowledge is an essential factor of attitude formation and the selection of perceptual objects. Previous studies have revealed that environmental knowledge significantly affects E-PEB in individual-level models (Chan et al., 2014, 2017; Okumus et al., 2019). This study extends the effect from individual-level variables to organizational and relational level variables, bridging the gap between different level variables of E-PEB. The findings further reveal the different influential paths of environmental knowledge on public and private E-PEB.

Finally, environmental risk perception is found to influence relational level variables but has no impact on organizational level variables. Previous studies presented mixed results in a non-workplace context, indicating the relationship between risk perception and PEB was moderated by other factors such as risk culture (Zeng et al., 2020) or mediated by social norms (Yu et al., 2019). This study is the first to introduce environmental risk perception into the organizational and E-PEB context. It supports that environmental risk perception strengthens employees' attitudes toward CSR and national park goal identification, further influencing private E-PEB. However, the results do not support the effect of environmental risk perception on environmental CSR perception, which deserves future investigation. It is possible to examine additional moderating variables that may influence employees' concern on environmental CSR practices, such as risk consequences perception, risk attitude (Pan, He, & Kong, 2020), and cultural worldviews (Xue, Hine, Loi, Thorsteinsson, & Phillips, 2014).

5.2. Managerial implications

On a practical level, this study has significant contributions to improve E-PEB and organizational environmental performance. First, E-PEB manifests in both public and private E-PEB. Managers need to differentiate between them and set different performance goals. Second, there are many complex factors influencing E-PEB in the workplace. Moreover, these factors influence public and private E-PEB in different ways. Managers should consider their influences on E-PEB differently.

Specifically, environmental CSR perception mainly influences public E-PEB. To motivate public E-PEB, tourism firms should communicate environmental CSR practices inside and outside of the organization using various channels, such as employee training, crew meetings, email, social media, promotion events, public relations, and environmental certification. Employees are more likely to engage in environmental CSR practices when they perceive their organizations are taking the lead. For example, several hotels were built on the top of the mountain inside Huangshan Scenic Resort before the 1980s, which hindered environmental protection. In recent years, Huangshan Tourism Development Co. Ltd proposed a slogan, "Go down the mountain, go out of the scenic resort." This strategy has been communicated inside and outside the company through the official company website and social media. The company has extended its business from traditional scenic resort, hotel, cableway, and cuisine to broader fields including E-business, tourist town, art performing, new retail, and supply chain. Most of its employees work outside the park. Like Huangshan, Wuyishan National Park also closed a tourist site in its core area, delivering a clear CSR message to its employee and the public.

In addition, private E-PEB is mainly influenced by attitude toward environmental CSR and national park goal identification. Therefore, cultivating a positive attitude and identifying environmental CSR and national park goals are crucial for improving private E-PEB. Due to these two factors being relational variables, only focusing on organizational level practices is not enough. Managers should know their employees' attitudes toward environmental CSR. In tourism firms based in national parks, managers need to know if their employees identify with national parks' organizational goals. The process should begin with employee recruitment. Choosing the right employee for the right position is the first step. If employees have a passion for environmental protection, they will easily align their personal and work attitudes and behaviors with the organizational goals.

Finally, managers need to know how to strengthen environmental CSR perception and cultivate positive attitudes and identification. This study found that environmental knowledge influenced both E-PEB through three mediator variables; therefore, the advancement of employees' environmental knowledge is an efficient way to improve E-PEB. Environmental education and training programs, both indoor and outdoor, can be organized. For example, companies can encourage their employees to participate in environmental education programs (e. g., wildlife watching) organized by natural protected areas in China. Besides, improving employees' environmental risk perception can strengthen private E-PEB through attitude toward environmental CSR and national park goal identification. Therefore, environmental education programs could add environmental risk knowledge by presenting materials about risk status and consequences. For example, in Huangshan National Park, the sewage and waste from hotels on the top of the mountain are challenging to treat and negatively affect Huangshan's ecosystem. The national park-based tourism firms have particular advantages in conducting these education programs because of their proximity and access to protected areas.

5.3. Limitations and future research directions

Although this study has contributions to E-PEB, some limitations still need to be addressed. First, this study integrated several level variables to explain E-PEB and obtained exciting findings. However, many other variables, such as organization identification, leadership, group climates, personal motivation, and environmental values, are not examined in the study. In particular, AlSuwaidi et al. (2021) called for research efforts on how E-PEB influences firm performance. Therefore, future research may want to explore more integrated models. Second, national park goal identification is a context-based variable; the model should be cautiously applied to other contexts, such as rural, urban, and cruise tourism. Future studies could propose specific context variables, especially for natural resource-based firms. Third, cultural influence needs to be considered when applying the findings to other cultural backgrounds. This present study was conducted in China, where collective cultural orientation may impact employees' CSR perception and their attitude toward CSR, which in turn influences their E-PEB. Meanwhile, risk preference is different across cultures. We call for more cross-cultural studies to improve the generalizability of our findings. Also, the influence of demographic variables and firm types deserve attention. Finally, since different E-PEB types are identified in the literature, future research should examine other E-PEB types (e. g., required E-PEB).

Acknowledgement

This research is supported by the National Natural Science Foundation of China (Grant No. 41971254).

References

Afsar, B., & Umrani, W. A. (2020). Corporate social responsibility and pro-environmental behavior at workplace: The role of moral reflectiveness, coworker advocacy, and environmental commitment. *Corporate Social Responsibility and Environmental Management, 27*(1), 109–125.

Aguinis, H. (2011). Organizational responsibility: Doing good and doing well. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology, Vol 3: Maintaining, expanding, and contracting the organization* (pp. 855–879). Washington: American Psychological Association.
AlSuwaidi, M., Eid, R., & Agag, G. (2021). Understanding the link between CSR and employee green behaviour. *Journal of Hospitality and Tourism Management, 46*, 50–61.
Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*, 20–39.
Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). New York: Routledge Publication.
Chan, E. S. W., Hon, A. H. Y., Chan, W., & Okumus, F. (2014). What drives employees' intentions to implement green practices in hotels? The role of knowledge, awareness, concern and ecological behaviour. *International Journal of Hospitality Management, 40*, 20–28.
Chan, E. S. W., Hon, A. H. Y., Okumus, F., & Chan, W. (2017). An empirical study of environmental practices and employee ecological behavior in the hotel industry. *Journal of Hospitality & Tourism Research, 41*(5), 585–608.
Cheema, S., Afsar, B., & Javed, F. (2020). Employees' corporate social responsibility perceptions and organizational citizenship behaviors for the environment: The mediating roles of organizational identification and environmental orientation fit. *Corporate Social Responsibility and Environmental Management, 27*(1), 9–21.
Chou, C. J. (2014). Hotels' environmental policies and employee personal environmental beliefs: Interactions and outcomes. *Tourism Management, 40*, 436–446.
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
Dudley, N. (2008). *Guidelines for applying protected area management categories*. Gland: IUCN, 2008. x, 86pp.: ill.
Esfandiar, K., Dowling, R., Pearce, J., & Goh, E. (2020). Personal norms and the adoption of pro-environmental binning behaviour in national parks: An integrated structural model approach. *Journal of Sustainable Tourism, 28*(1), 10–32.
Farooq, O., Rupp, D. E., & Farooq, M. (2017). The multiple pathways through which internal and external corporate social responsibility influence organizational identification and multifoci outcomes: The moderating role of cultural and social orientations. *Academy of Management Journal, 60*(3), 954–985.
Fatoki, O. (2019). Hotel employees' pro-environmental behaviour: Effect of leadership behaviour, institutional support and workplace spirituality. *Sustainability, 11*, 4135.
Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row.
Fryxell, G. E., & Lo, C. W. H. (2003). The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: An empirical examination of managers in China. *Journal of Business Ethics, 46*, 45–69.
Glavas, A., & Kelley, K. (2014). The effects of perceived corporate social responsibility on employee attitudes. *Business Ethics Quarterly, 24*(2), 165–202.
Gond, J. P., El Akremi, A., Swaen, V., & Babu, N. (2017). The psychological microfoundations of corporate social responsibility: A person-centric systematic review. *Journal of Organizational Behavior, 38*(2), 225–246.
Hair, J. E., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55.
Islam, T., Ali, G., & Asad, H. (2019). Environmental CSR and pro-environmental behaviors to reduce environmental dilapidation: The moderating role of empathy. *Management Research Review, 42*(3), 332–351.
Kaiser, F. G., Wölfing, S., & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology, 19*, 1–19.
Kaplan, S. (1991). Beyond rationality: Clarity-based decision making. In T. Garling, & G. Evans (Eds.), *Environment, cognition and action* (pp. 171–190). New York: Oxford University Press.
Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management, 76*, 83–93.
Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford.
Lewin, K. (1951). *Field theory in social science*. New York: Harper.
Ling, R. S. J., Wu, B. H., Park, J., Shu, H., & Morrison, A. M. (2013). Women's role in sustaining villages and rural tourism in China. *Annals of Tourism Research, 43*, 634–638.
Lo, S. H., Peters, G.-J. Y., & Kok, G. (2012). A review of determinants of and interventions for pro-environmental behaviors in organizations. *Journal of Applied Social Psychology, 42*, 2933–2967.
Lülfs, R., & Hahn, R. (2014). Sustainable behavior in the business sphere: A comprehensive overview of the explanatory power of psychological models. *Organization & Environment, 27*, 43–64.
Luu, T. T. (2017). CSR and organizational citizenship behavior for the environment in hotel industry: The moderating roles of corporate entrepreneurship and employee attachment style. *International Journal of Contemporary Hospitality Management, 29*(11), 2867–2900.
Luu, T. T. (2018). Activating tourists' citizenship behavior for the environment: The roles of CSR and frontline employees' citizenship behavior for the environment. *Journal of Sustainable Tourism, 26*(7), 1178–1203.
Luu, T. T. (2019a). Green human resource practices and organizational citizenship behavior for the environment: The roles of collective green crafting and environmentally specific servant leadership. *Journal of Sustainable Tourism, 27*(8), 1167–1196.
Luu, T. T. (2019b). Catalyzing employee OCBE in tour companies: Charismatic leadership, organizational justice, and pro-environmental behaviors. *Journal of Hospitality & Tourism Research, 43*(5), 682–711.
Luu, T. T. (2019c). Building employees' organizational citizenship behavior for the environment: The role of environmentally-specific servant leadership and a moderated mediation mechanism. *International Journal of Contemporary Hospitality Management, 31*(1), 406–426.
Luu, T. T. (2020). Environmentally-specific servant leadership and green creativity among tourism employees: Dual mediation paths. *Journal of Sustainable Tourism, 28*(1), 86–109.
Nhat, T. P., Tuckova, Z., & Jabbour, C. J. C. (2019). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study. *Tourism Management, 72*, 386–399.
Norton, T. A., Parker, S. L., & Zacher, H. (2015). Employee green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment, 28*(1), 103–125.
Okumus, F., Köseoglu, M. A., Chan, E., Hon, A., & Avci, U. (2019). How do hotel employee's environmental attitudes and intentions to implement green practices relate to their ecological behavior? *Journal of Hospitality and Tourism Management, 39*, 193–200.
Pan, D., He, M. M., & Kong, F. B. (2020). Risk attitude, risk perception, and farmers' pesticide application behavior in China: A moderation and mediation model. *Journal of Cleaner Production, 276*, Article 124241.
Peng, X., & Lee, S. (2019). Self-discipline or self-interest? The antecedents of hotel employees' pro-environmental behaviours. *Journal of Sustainable Tourism, 27*(9), 1457–1476.
Ramkissoon, H., Mavondo, F., & Uysal, M. (2018). Social involvement and park citizenship as moderators for quality-of-life in a national park. *Journal of Sustainable Tourism, 26*(3), 341–361.
Rezapouraghdam, H., Alipour, H., & Darvishmotevali, M. (2018). Employee workplace spirituality and pro-environmental behavior in the hotel industry. *Journal of Sustainable Tourism, 26*(5), 740–758.
Ruepert, A. M., et al. (2017). The relationship between Corporate Environmental Responsibility, employees' biospheric values and pro-environmental behaviour at work. *Journal of Environmental Psychology, 54*, 65–78.
Slovic, P. (1987). Perception of risk. *Science, 236*, 280–285.
Suganthi, L. (2019). Examining the relationship between corporate social responsibility, performance, employees' pro-environmental behavior at work with green practices as mediator. *Journal of Cleaner Production, 232*, 739–750.
Su, L., Huang, S. S., & Pearce, J. (2018). How does destination social responsibility contribute to environmentally responsible behaviour? A destination resident perspective. *Journal of Business Research, 86*, 179–189.
Su, L., & Swanson, S. R. (2019). Perceived corporate social responsibility's impact on the well-being and supportive green behaviors of hotel employees: The mediating role of the employee-corporate relationship. *Tourism Management, 72*, 437–450.
Tudor, T. L., Barr, S. W., & Gilg, A. W. (2007). A novel conceptual framework for examining environmental behavior in large organizations. *Environment and Behavior, 40*(3), 426–450.
Turker, D. (2009). How corporate social responsibility influences organizational commitment. *Journal of Business Ethics, 89*, 189–204.
Xue, W., Hine, D. W., Loi, N. M., Thorsteinsson, E. B., & Phillips, W. J. (2014). Cultural worldviews and environmental risk perceptions: A meta-analysis. *Journal of Environmental Psychology, 40*, 249–258.
Xu, G., Feng, X., Li, Y., Chen, X., & Jia, J. (2017). Environmental risk perception and its influence on well-being. *Chinese Management Studies, 11*(1), 35–50.
Yoon, D., Jang, J., & Lee, J. (2016). Environmental management strategy and organizational citizenship behaviors in the hotel industry: The mediating role of organizational trust and commitment. *International Journal of Contemporary Hospitality Management, 28*(8), 1577–1597.
Yu, T. K., Chang, Y. J., Chang, I. C., & Yu, T. Y. (2019). A pro-environmental behavior model for investigating the roles of social norm, risk perception, and place attachment on adaptation strategies of climate change. *Environmental Science and Pollution Research, 26*(24), 25178–25189.
Zeng, J., Jiang, M., & Yuan, M. (2020). Environmental risk perception, risk culture, and pro-environmental behavior. *International Journal of Environmental Research and Public Health, 17*(5), 1750.
Zhang, J., & Huang, R. (2019). Employees' pro-environmental behaviours (PEBs) at international hotel chains (IHCs) in China: The mediating role of environmental concerns (ECs). *Journal of Hospitality and Tourism Management, 39*, 129–136.
Zientara, P., & Zamojska, A. (2018). Green organizational climates and employee pro-environmental behaviour in the hotel industry. *Journal of Sustainable Tourism, 26*(7), 1142–1159.

Hongmei Zhang is Professor in Shanghai Institute of Tourism, Shanghai Normal University, China. Her current research interests include consumer behavior in tourism, tourism destination marketing, pro-environmental behavior and national park. Her work has been published in leading tourism journals including Tourism Management, Journal of Travel Research and Journal of Destination Marketing & Management.

Xinyue Zhang is a Master degree candidate at Shanghai Institute of Tourism, Shanghai Normal University, China. Her current research addresses employees' pro-environmental behavior.

Billy Bai is Professor and Associate Dean of Research in the William F. Harrah College of Hospitality at the University of Nevada Las Vegas (UNLV). His current research interests focus on hospitality and tourism marketing. His research work has appeared in top tier and reputable journals in hospitality and tourism.