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Tourists' water conservation behavior in hotels: the role of gender

Abstract: Hotels and destination managers are increasingly expressing concern about the impacts of climate change and sustainable water use, especially in crowded and water-scarce destinations. The aim of this study is to examine gender differences in hotel guests' reported water conservation behavior (WCB) when on vacation. The study examines several factors that can potentially affect these gender differences, namely attitudes toward water conservation, normative and hedonic motives, destination problem awareness, and destination attachment. Data from a sample of 680 hotel guests reveal significant gender differences, with specific factors affecting the WCB of guests of each gender. Attitudes exert a positive influence on guests' WCB. This influence is greater for women than for men. Normative motives also positively influence attitudes, although this effect is greater for men than for women. Conversely, hedonic motives negatively influence water conservation attitudes, and this effect is greater for women than for men. Lastly, destination problem awareness positively influences normative motives, while destination attachment negatively influences hedonic motives. No gender effect is found for these relationships. The implications for research and practice in sustainable tourism and pro-environmental behavior are presented.

Keywords: gender, in-room water conservation, attitudes toward water conservation, normative and hedonic motives, destination problem awareness, destination attachment

1. Introduction

Water is a key resource in the tourism industry, since hotel facilities and tourists depend heavily on water for direct and indirect use (Gössling et al., 2019). Considerable academic research has focused on this topic in the last decade. An increasing number of studies have examined water-saving measures by hotels, such as reducing water consumption (e.g., through water-efficient appliances, low-flow showerheads, and towel reuse initiatives) and recycling water (Gössling et al., 2019). However, further research is needed to better understand the underlying factors behind guests' water conservation behavior. Only then can more specific strategies be developed to reduce water overuse and encourage more sustainable behaviors (Hadjikakou et al., 2015).

The research objectives of this study are twofold. First, building on environmental psychology theories such as goal-framing theory (Lindenberg & Steg, 2007), this study examines the importance of cognitive and affective determinants of water conservation attitudes. The determinants considered in this study are normative and hedonic motives and contextual factors of the destination (destination place attachment and destination problem awareness). Most studies of water conservation behavior or intention have considered either social or cognitive drivers (e.g., Han & Hyun, 2018b, 2018c). However, affective motives can influence the extent to which individuals interact with their surroundings, thus influencing their pro-environmental behavior (Steg et al., 2014). Moreover, research on guests' pro-environmental behavior in hotels has typically measured general intentions to conserve water through items such as "I am willing to conserve water in a lodging context when traveling" (e.g., Untaru et al., 2016; Han & Hyun, 2018b). This approach prevents the extrapolation of findings to specific behaviors such as in-room water conservation behaviors. To overcome this limitation, the present study examines reported water conservation behavior and measures this behavior by analyzing *specific* in-room activities (e.g., "I've turned off the tap while brushing my teeth"). Therefore, hotel managers can use the findings of the present study to implement specific measures to solve specific problems. They can thus incentivize guests' reduction of in-room water use and prevent misuse. This issue is critical in regions with water scarcity problems. These problems affect many tourist destinations around the world, but they are particularly acute in the Mediterranean region.

Second, when examining the sociodemographic and psychological aspects of individuals' environmental concern and behavior, research has shown that women seem to have greater concern for the environment than men (e.g., Dietz et al., 2002; Dzialo, 2017; Zelezny et al.,

2000). Research also suggests that women tend to engage more frequently in general pro-environmental behavior (PEB) than men (Dzialo, 2017) and that several individual and contextual factors can influence this PEB (Knight, 2019). The most common explanations are based on socialization theory (Zelezny et al., 2000), evolutionary psychology (Saad & Gill, 2000), and ecofeminism (Dzialo, 2017). In the context of the hotel industry, evidence of gender effects is mixed. For example, some studies of guests' willingness to pay for green initiatives by hotels have shown that women are more likely to pay a premium (e.g., Han et al., 2011), while others have indicated the opposite (e.g., Kang et al., 2012). This difference in behavior might be influenced by many factors, including context, location, culture, and perceived environmental degradation (Knight, 2019). Therefore, research in different contexts is needed to fully understand gender differences in PEB (Briscoe et al., 2019). This study addresses this gap and examines the key moderating role of gender in the context of water conservation behavior in hotels. Nevertheless, the novelty of the research does not circumscribe to examining the effect of gender on specific relationships between variables, but rather on the whole model. The rationale is that the expected differences between female and male tourists should apply to the proposed relationships because the findings in the consumer behavior literature show that gender affects the relationships between affective, cognitive, and attitudinal variables (Han & Hyun, 2018a).

2. Theoretical framework

2.1. The relationship between water conservation attitudes and behavior and the role of gender

Attitude is the most frequently used concept in sustainable tourism to explain environmentally responsible behavior based on the attitude–behavior model (e.g., Gao et al., 2017). Research on attitudes in relation to tourists' sustainable choices has primarily focused on general environmental attitudes and attitudes toward ecotourism or sustainable tourism (Passafaro, 2020). In a hotel context, empirical studies have considered attitudes toward staying at, visiting, and revisiting green hotels (e.g., Chen & Tung, 2014). To a lesser extent, studies have also examined attitudes toward green practices in the lodging industry (Manaktola & Jauhari, 2007) and attitudes toward performing eco-friendly behaviors at a hotel, such as towel reuse (Han, Lee, & Kim, 2018) and water conservation (Untaru et al., 2016). This study focuses on the latter approach by examining the association between actual guests' attitudes toward water-saving practices and these guests' water conservation behavior. Regarding hotel guests' behaviors, the

present study focuses on hotel guests' reported in-room water conservation behavior when on vacation. In-room water use includes behaviors such as showering, flushing the toilet, and brushing teeth, which are directly related to water use. However, in-room water use also covers bed linen changes and towel replacement. In short, in-room water conservation behavior includes any individual effort to save water consumed through any such use (Marandu et al., 2010).

The literature stresses the positive and significant influence of attitudes on individuals' intentions to conserve water in both household settings (e.g., Dolnicar et al., 2012) and hotel contexts (e.g., Untaru et al., 2016). Assuming that intention is a strong antecedent of behavior, a similar relationship between attitudes and behaviors is to be expected (Gao et al., 2017). Thus, an individual with a favorable attitude toward water conservation should act accordingly. For example, Marandu et al. (2010) reported a positive relationship between attitudes toward water conservation and water conservation behavior in a household context. Therefore, the following hypothesis is proposed:

H1a. Attitudes toward water conservation are positively associated with guests' reported in-room water conservation behavior.

Gender has been studied as a possible moderator of the relationship between attitudes and behaviors (Ajzen & Fishbein, 1980). Studies of the moderating role of gender in environment-related contexts suggest that when environmental attitudes are strong, green purchasing behaviors are greater among women than among men (e.g., Dagher et al., 2015). Hasnain et al. (2020) also found a positive relationship between environmental attitudes and greater green buying intention among women than among men. In contrast, Chekima et al. (2016) did not find support for such a moderating effect. These inconclusive results highlight the need for further research on this topic to improve the current understanding of gender differences in tourism behaviors (Vicente-Molina et al., 2018).

In the hotel industry, research has shown that gender may be used to segment hotel guests by their PEB and attitudes, with studies revealing that female guests behave in a more environmentally friendly way than male visitors (Dolnicar & Leisch, 2008). However, in the literature on hotel water conservation behavior, this perspective tends to be omitted from the models (e.g., Untaru et al., 2016). Only recently have researchers started considering the moderating role of gender in this context, although not in relation to attitudes (Han & Hyun, 2018b; Han et al., 2020). Despite a lack of evidence of gender moderation in the attitude–behavior relationship in the hotel context, research has shown a gender effect when the two

variables are examined independently. More specifically, women have been found to have greater (positive) attitudes toward water conservation than men (Lipchin et al., 2005). Women are also more inclined than men to engage in water conservation behaviors when traveling (Gabarda-Mallorquí et al., 2018). According to some authors, women seem more likely to engage in pro-environmental behaviors such as water conservation because these behaviors are linked to their private sphere (Dietz et al., 2002; Vicente-Molina et al., 2018). As stated by Vicente-Molina et al. (2018, p. 91), “gender differences can be expected to affect explanatory factors and, through them, pro-environmental behavior.” Based on the previous findings, the following hypothesis is proposed:

H1b. The relationship between attitudes toward water conservation and guests’ reported in-room water conservation behavior is stronger for women than for men.

2.2. Cognitive and affective components of attitudes toward water conservation behavior

2.2.1. Normative and hedonic motives for water conservation behavior

The most widely used and well-known theories in environmental research, such as the theory of planned behavior (TPB; Ajzen, 1985) and the norm-activation model (NAM; Schwartz, 1977), are based on the assumption that people are rational in their decision-making processes and actions. Accordingly, cognitive determinants (e.g., environmental beliefs, knowledge, and norms) are important motivators for individuals who engage in PEB. Nevertheless, in recent decades, scholars have advocated the inclusion of affective factors and emotions to extend these theories (Steg & Vlek, 2009). For instance, Eagly and Chaiken (2007) argued that people’s attitudes are typically based on both affective and cognitive components. Thus, recent studies of environmental consumer behavior have sought to explain evaluations of an attitude object or event (e.g., recycling) in terms of people’s cognition/thinking and feeling-based evaluations (e.g., Rodriguez-Sanchez et al., 2018).

This idea is also supported by goal-framing theory in environmental psychology (Lindenberg & Steg, 2007). According to this theory, individuals behave subject to three overarching goal frames: the normative goal (to act appropriately), the gain goal (to protect or improve one’s resources), and the hedonic goal (to feel better right now). While normative and gain goals activate cognitive and instrumental motives such as moral norms or saving money, hedonic goals activate one or more sub-goals to improve the way one feels in each situation (e.g., avoiding effort or seeking direct pleasure). The prevalence of a goal in a decision depends

on the predominant values of the decision maker and on external cues (e.g., the context) that activate different values (Steg et al., 2014). In the case of in-room water conservation behavior, normative and hedonic goals seem to play a key role (Han & Hyun, 2018b; Miao & Wei, 2013).

Concerning normative motives, a multidisciplinary stream of research indicates that morality plays an influential role in attitude formation and that moral appeals can be a powerful tool for persuasion (Feinberg & Willer, 2013). Perceiving environmental issues in moral terms is associated with the strength and valence of individuals' environmental attitudes (Feinberg & Willer, 2013). Cognitive factors such as ascription of responsibility and awareness of environmental problems are prerequisites for the development of moral norms, which in turn influence environmental decision making (Bamberg & Moser, 2007). Unsurprisingly, therefore, past studies have found that one important reason why travelers behave pro-environmentally is that they feel it is the moral or right thing to do (Han & Hyun, 2018c; Kiatkawsin & Han, 2017). Based on this idea, the following hypothesis is proposed:

H2a. Guests' normative motives regarding responsible water use are positively associated with attitudes toward water conservation.

According to goal-framing theory, hedonic goals should be stronger than normative goals because they relate to the most basic need, namely satisfaction (Lindenberg & Steg, 2007). Hedonic goal-framing suggests that affect has the strongest impact on people's attitudes and behavior (Huijts et al., 2010). Hedonic motives are rooted in hedonic values, which are primarily focused on improving one's feelings and reducing effort (Steg et al., 2014). Therefore, hedonic values are negatively linked to environmental beliefs, attitudes, and preferences because they are likely to make people concentrate on the possible hedonic aspects of environmental behavior such as pleasure, discomfort, or effort (Steg et al., 2014). In the lodging context, research has shown that hedonic motives are more salient than moral motives when guests are on vacation (e.g., Miao & Wei, 2013, 2016). For example, several studies have shown that the likelihood that an individual behaves environmentally in a hotel is predominantly a negative function of motives such as personal comfort and enjoyment (Miao & Wei, 2013, 2016; Wang et al., 2018). Based on this line of reasoning, the following hypothesis is proposed:

H3a. Guests' hedonic motives are negatively associated with attitudes toward water conservation.

2.2.2. The effect of destination context on normative and hedonic motives for water conservation behavior

Scholars have emphasized the need for further research on the role of contextual or situational factors in the attitude–behavior relationship, as well as motivators to behave pro-environmentally when traveling (Passafaro, 2020). In response to these calls, this study examines the effect of destination context (i.e., destination problem awareness and destination attachment) on normative and hedonic motives.

Awareness of consequences refers to “whether someone is aware of the negative consequences for others or for other things on values when not acting prosocially” (De Groot & Steg, 2009, p. 426). This awareness might influence a tourist’s sense of obligation to behave pro-environmentally through personal norms. The NAM theory describes the role of problem awareness, normative motives (personal norms), and ascription of responsibility in explaining prosocial intentions or behavior (Schwartz, 1977). Scholars have examined the associations between these variables, where problem awareness, ascribed responsibility, and personal norms are related to pro-environmental intentions or behavior in different ways (e.g., De Groot & Steg, 2009).

Regarding destination problem awareness, it might be expected that if tourists are aware of environmental problems in a destination, they feel obliged to adapt their behavior to reduce the negative impact of their actions (Han & Hyun, 2018c). This study tests the relationship between problem awareness and personal norms, in line with previous studies in the hotel context (Chen & Tung, 2014; Han et al., 2015). Chen and Tung (2014) found that hotel guests perceive a stronger moral obligation when they are highly concerned about the environment and its harmful impact. Similarly, Han et al. (2015) showed a direct link between problem awareness and moral norms when explaining hotel customers’ pro-environmental intention to revisit. Therefore, the following hypothesis is proposed:

H4a. Guests’ destination problem awareness is positively associated with normative motives.

Place attachment can be defined as “an affective bond to a particular geographical area and the meaning attributed to that bond” (Morgan, 2010, p. 12). In tourism, place attachment is often described as “destination attachment” (e.g., Yuksel et al., 2010), which refers to the link between tourists and the place or destination where they spend their vacations. Applying goal-framing theory to the uniquely hedonic context of tourism (Juvan & Dolnicar, 2014) and vacations (Otto & Ritchie, 1996), hedonic motives are expected to strongly drive tourists’

behavior. With tourists' pro-environmental behavior and intention, if tourists have a strong attachment to a destination, they might be willing to protect it (Gifford & Nilsson, 2014). In fact, several authors have reported an association between place attachment and PEB (e.g., Raymond et al., 2011; Tonge et al., 2015). Similarly, when tourists are strongly attached to a destination, they are more inclined to make sacrifices for the environment, even at the expense of immediate self-interest, effort, or cost (Davis et al., 2011). Thus, a negative relationship between destination attachment and hedonic motives is expected, and a stronger attachment to the destination should lessen the importance of hedonic motives (perceived effort and cost associated with saving water during the stay). Accordingly, the following hypothesis is proposed:

H5a. Guests' destination attachment is negatively associated with hedonic motives.

2.2.3. Cognitive and affective components of attitudes toward water conservation behavior: the role of gender

Several attempts to explain environmental moral obligation using theories such as the NAM and value-belief-norm theory (VBN; Stern, 2000) have revealed significant gender differences (e.g., Nordfjærn & Rundmo, 2019; Stern et al., 1993). These studies have consistently shown that women have a greater moral obligation than men to behave pro-environmentally. Studies have also shown that women tend to be more concerned and knowledgeable than men about the environment and associated problems (e.g., Tindall et al., 2003; Zelezny et al., 2000). Women also report stronger pro-environmental views about environmental issues than men (Xiao & McCright, 2015). However, other studies have revealed the opposite, indicating that men are more concerned about environmental issues and have greater knowledge than women (e.g., Shen & Saijo, 2008). Women seem to express greater levels of concern about site-specific and local environmental problems (e.g., water scarcity) than men (Davidson & Freudenburg, 1996). By contrast, with broader issues such as preserving wildlife and biodiversity, gender differences are weak or non-existent (Hayes, 2001). These results show that individual findings may be contingent on the specific issue at hand.

Gender differences have been explained using gender socialization theory (Zelezny et al., 2000). Gender socialization theory posits that women have a greater moral obligation to act pro-environmentally than men as a result of gender-based socialization processes (Lee et al., 2013). Early childhood socialization renders women more sensitive to the feelings and needs of others. Thus, they are more concerned about the environment than men and are more

motivated to work for the environment. On the contrary, men are more focused on economic issues, are the main earners, and see themselves as more detached from the natural world than women (Zelezny et al., 2000).

In the context of sustainable tourism (nature-based destination), Meng and Uysal (2008) showed that women place more importance than men on most destination attributes. Unsurprisingly, therefore, environmental studies in the hospitality industry have evidenced that women show greater levels of moral obligation and problem awareness than men when they are traveling. For instance, Han and Hyun (2018a) found that women had a greater sense of obligation toward eco-friendly behaviors while traveling, which translated into higher levels of eco-friendly purchasing and recycling behavior. Similarly, in a study of university students, Alonso-Almeida (2013) found that women were more prone to engaging in environmental practices in tourism management because they were more aware of environmental problems in the tourism industry. Regarding water conservation behavior, very few studies have examined the influence of gender on internal perceptions and responses such as moral obligation and environmental awareness. These studies have yielded inconsistent results. For instance, Han and Hyun (2018b) found that the linkage between personal norms and water conservation intentions in a hotel context is not moderated by gender. In contrast, Han et al. (2020) empirically found that the relationship between environmental awareness and the intention to conserve water, energy, or local resources when traveling is stronger for young women than for men. Given the scant literature on hotels and gender, and drawing on the environmental and sustainable tourism literature cited above, the following hypotheses are proposed:

H2b. The relationship between normative motives and attitudes toward in-room water conservation behavior is stronger for women than for men.

H4b. The relationship between destination problem awareness and normative motives is stronger for women than for men.

Hedonic values have been used in environmental research because they have been found to be important predictors of PEB (Steg et al., 2014). Hedonic values, along with egoistic values, shape self-enhancement values, which reflect a concern for one's own interests. Such values are contrary to self-transcendence values, which signal a concern for collective interests (Steg et al., 2014). Research has shown that men exhibit greater levels of self-enhancement than women, resulting in lower PEB among men. However, the evidence of this effect warrants further examination (Mobley & Kilbourne, 2013). For example, Balundé et al. (2019) recently failed to find significant gender differences in the relationship between hedonic values and PEB.

Moreover, in a tourism context, Han, Yu, Kim, and Kim (2018) found that the relationship between willingness to make sacrifices for the environment when traveling and intentions to reduce waste and recycle do not differ significantly by gender.

The situation seems to be different with respect to the consumption of products and services. The consumer behavior literature hypothesizes that hedonic value may be derived from the immediate pleasure or joy of consumption, and studies have consistently shown that the effect of hedonic value on attitudes and behavior is stronger for women than for men (Jackson et al., 2011; Yang & Lee, 2010). For instance, Gatersleben et al. (2014) analyzed consumer identities and environmental variables such as pro-environmental attitudes and ecological purchases. They found that women are more likely to identify themselves with a hedonistic consumer identity than men, but they did not find gender differences in conscious consumer identity. The limited evidence suggests that women might be more hedonistic than men when traveling (consuming the tourist experience) and when using water in their hotel rooms. For example, an in-room water conservation action such as towel reuse means some loss of comfort, reduces the hedonic value of the accommodation, and lessens the joy of using fresh, dry towels every day. This greater hedonistic tendency may mean that the negative relationship between hedonic motives and attitudes to save water in hotels is stronger for women than for men. Finally, the relationship between place attachment and hedonic motives may also be stronger for women than for men. Several authors have affirmed that gender plays a critical role in place attachment, with women developing more attachment and stronger affective connections to a place (Hidalgo & Hernández, 2001; Rollero & De Piccoli, 2010). However, other authors have found that men and women show the same levels of place attachment (Brown et al., 2003). Within the tourism context, Ramkissoon and Mavondo (2015) showed that although gender has no significant main effect on any dimension of place attachment, it moderates the link between visitors' pro-environmental behavioral intention and certain dimensions of place attachment (i.e., place identity, place affect, and place dependence). Based on the scant literature and the above ideas, the following hypotheses are proposed:

H3b. The relationship between hedonic motives and attitudes toward in-room water conservation behavior is stronger for women than for men.

H5b. The relationship between destination attachment and hedonic motives is stronger for women than for men.

The hypotheses are summarized in Figure 1.

[Figure 1 around here]

3. Method

3.1. Sample and data collection

A face-to-face survey (CAPI with Qualtrics software®) was used to gather data at the hotel premises. Although initial contact with respondents was in person, individuals self-administered the questionnaire using a tablet. The interviewer was on hand to provide support if necessary. This form of data collection, together with the choice of question order so as not to disclose the purpose of the study earlier than necessary, was used to reduce social desirability bias (Juvan & Dolnicar, 2017). An external market research institute conducted the fieldwork using actual tourists in six four-star hotels in Benidorm between July and August 2019 (summer season). Benidorm is an ideal study setting for two reasons. First, it is one of the most important “sun and sand” tourist destinations in the Mediterranean (Ivars-Baidal et al., 2013), welcoming more than 11 million tourists in 2018 (INE, 2019). Second, it has a high density of hotels, which means that its tourism activity exerts extra pressure on water demand (Casares-Blanco et al., 2019). Although Benidorm officially has around 67,000 inhabitants, the average number of water consumers in the summer season rises to above 100,000 (Sánchez-Galiano et al., 2017). Based on previous studies, which highlight the importance of hotel quality on guests’ water consumption (e.g., Rico et al., 2020), this study centers on understanding the water conservation behavior of guests in four-star hotels (mid-to-high level). A final sample of 680 guests from 758 responses (89.70%) was used. This sampling procedure met previously established quotas (GVA, 2016) and ensured that respondents had stayed at the hotel for at least three nights. Table 1 shows the respondent profile.

[Table 1 around here]

3.2. Survey instruments

The scales used to operationalize the variables in the model were all at the same behavior-specific level, related to water consumption and conservation (Steg & De Groot, 2010). The antecedents of reported water conservation behavior (RWCB) were selected and adapted from the literature. These antecedents are attitudes toward water conservation (ATT), hedonic motives (HM), normative motives (NM), destination problem awareness (DPA), and destination attachment (DA). All constructs were measured using multiple items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). RWCB was measured using the mean (aggregate index) of nine items from the literature (see Appendix). The responses to the

statements related to in-room water conservation actions ranged from 1 (*never*) to 7 (*all the time*). These statements on actual hotel guests' reported in-room water conservation behavior were preferred to items on generic PEB to reduce self-reported bias (Kormos and Gifford, 2014). Table 2 shows the main descriptive statistics of the variables in the model.

[Table 2 around here]

3.3. Data analysis

The data were analyzed using IBM-SPSS v26 and EQS 6.2. A two-step estimation process was used to estimate the model (Anderson & Gerbing, 1988). Confirmatory factor analysis (CFA) was performed to assess reliability and validity of the measurement model. Once these psychometric features had been confirmed for the full sample, the measurement invariance between genders was assessed (Hair et al., 2006). A sequence of multigroup CFA estimations was used to assess the loose cross-validation, configural invariance, and metric invariance (Steenkamp & Baumgartner, 1998). Finally, multigroup structural equation modeling (SEM) was used to test the proposed hypotheses. This model was considered the optimal model to analyze the moderating role of a discrete variable (i.e., gender) jointly in all relationships of the model (Byrne, 2013). This model also utilized the factor structure of the data (latent constructs and observable variables).

4. Results

CFA of the whole sample of guests was performed to confirm the dimensional structure and assess convergent validity. Overall, the model showed acceptable fit (see Table 3). Convergent validity was checked using several criteria (Jöreskog & Sörbom, 1993). All items satisfied both the weak convergence criterion (the factor loadings of all items were statistically significant) and the strong convergence criterion (all factor loadings were greater than 0.5). Convergent validity was also confirmed because all average variance extracted (AVE) scores were greater than 0.5 (Fornell & Larcker, 1981; Table 3). All composite reliability indexes (CRI) were above 0.65, thus confirming construct reliability (Steenkamp & Geyskens, 2006).

[Table 3 around here]

Discriminant validity was confirmed by two findings: (i) none of the 95% confidence intervals of the correlations between each pair of factors included unity (Anderson & Gerbing, 1988) and (ii) all AVE scores were greater than the squared between-construct correlations (Wiertz & de Ruyter, 2007; see Table 4).

[Table 4 around here]

Analysis of the invariance of the measurement instrument between genders consisted of a sequence of CFA estimations (Steenkamp & Baumgartner, 1998; see Table 5).

[Table 5 around here]

First, the independent CFA estimations for women and men supported loose cross-validation because both had good overall fit. Second, configural invariance was assessed by imposing the same structure of latent factors between both groups (equal form) on the CFA. Configural invariance was supported by the results because the restricted model had good overall fit, and all latent variables were specified by the same indicators. Third, metric invariance was assessed by imposing equality restrictions of the factor loadings of items for both groups on the CFA. This invariance was assessed by analyzing the incremental fit of these nested models compared to equal form estimation (Putnick & Bornstein, 2016). The results supported metric invariance because (i) $\Delta\text{CFI} = .002$ (less than the recommended cutoff of 0.01) and (ii) $\Delta\text{SRMS} = .001$ (less than the recommended cutoff of .030; Chen, 2007). Given the large sample size, these indicators were preferred to $\Delta\chi^2$, as recommended by Cheung and Rensvold (2002).

Multigroup structural equation modeling (SEM) was performed to test the hypotheses (see Table 6). The sample estimation and multigroup estimation have acceptable overall fit.¹

[Table 6 around here]

All proposed relationships in the model are significant and have the expected sign. All three estimations (full sample, subsample of women, and subsample of men) indicate that attitudes

¹ As per the literature on the limitations of goodness-of-fit indicators (Chen et al., 2008), overall model fit should be assessed by examining several measures of fit. Although the RMSEA and its confidence interval are on the limit of being considered acceptable (McCallum et al., 1996), other indicators such as BBNNFI and CFI are above the acceptable threshold.

are positively and significantly related to reported water conservation behavior (RWCB), supporting H1a. Moreover, the association between attitudes and RWCB is greater for women than for men ($\beta_{\text{women}} = .76$, $\beta_{\text{men}} = .57$, $\Delta\chi^2 [1] = 27.07$, $p < .05$), supporting H1b.

Regarding the antecedents of attitudes, normative motives and attitudes are positively and significantly related, supporting H2a. Unexpectedly, however, the relationship between norms and attitudes is stronger for men than for women ($\beta_{\text{women}} = .25$, $\beta_{\text{men}} = .44$, $\Delta\chi^2 [1] = 3.88$, $p < .05$), so the results do not support H2a. In contrast, hedonic motives seem to be significantly negatively associated with attitudes (supporting H3a) for all three estimations. In terms of gender, hedonic motives to save water are greater for women than for men ($\beta_{\text{women}} = -.79$, $\beta_{\text{men}} = -.53$, $\Delta\chi^2 [1] = 51.80$, $p < .05$), supporting H3b.

Regarding perceived situational factors, guests' perceived destination problem awareness is significantly associated with greater normative motives to conserve water, supporting H4a. In this case, gender does not seem to play a moderating role ($\beta_{\text{women}} = .70$, $\beta_{\text{men}} = .70$, $\Delta\chi^2 [1] = 1.27$, $p > .1$), so the results do not support H4b. Lastly, guests' destination attachment is negatively and significantly related to hedonic motives for conserving water, supporting H5a. As in the previous case, gender does not seem to play a moderating role ($\beta_{\text{women}} = -.49$, $\beta_{\text{men}} = -.50$, $\Delta\chi^2 [1] = 1.98$, $p > .1$), so the results do not support H5b.

5. Discussion and conclusions

This study enhances the current understanding of hotel guests' attitudes and reported in-room water conservation behavior by considering moral and hedonic motives, perceived situational factors (destination problem awareness and attachment), and gender. First, the results show that guests' attitudes toward saving water on vacation are crucial to explain guests' reported in-room water conservation behavior. This finding supports the literature on sustainable tourism, according to which attitudes are considered a prerequisite of PEB and the intention to behave pro-environmentally (e.g., Han, Lee & Kim, 2018; Untaru et al., 2016). Furthermore, the relationship between attitudes and reported water conservation is stronger for women than for men, in line with previous studies (Lipchin et al., 2005). This finding suggests that when women have stronger attitudes toward saving water, they are more likely to behave pro-environmentally than men. Consequently, the attitude-behavior gap is smaller for women than for men in a hotel context.

Second, the findings indicate that guests' hedonic motives to conserve water in a hotel when on vacation are stronger antecedents of attitudes than normative motives. This interesting

finding implies that the relative importance of a goal in a decision depends not only on its value for the decision maker but also on the context where the decision is made (Steg et al., 2014). In a vacation context, hedonic motives seem to be more salient than moral motives. A possible explanation may be that hedonic motives are less rational and involve people's desire to feel comfortable (Lindenberg & Steg, 2007). In addition to this predominance of hedonic motives, gender also moderates the relationship between motivators and attitudes toward water conservation, as suggested in previous studies (e.g., Lee et al., 2013). Unexpectedly, moral obligation (moral motives) seems to be a weaker predictor of attitudes toward conserving water for women than for men. This result contradicts the findings of other environmental studies (e.g., Joireman et al., 2001; Nordfjærn & Rundmo, 2019) and differs from those of studies in the hotel sector showing no significant gender differences (e.g., Han & Hyun, 2018b). One probable reason for this finding is the study setting. Benidorm is a "sun and sand" mass tourism destination. Tourists usually visit Benidorm to relax and escape from their daily routines. In such a context, tourists' sense of responsibility may be susceptible to temporary "suspension" (Miao & Wei, 2016). For example, Dolnicar et al. (2017) reported that even highly environmentally aware tourists (*eco-centric* tourists) are not willing to behave pro-environmentally when they are on vacation. It is therefore likely that women, who usually bear the brunt of family obligations, experience a greater degree of suspension of obligations (including environmental obligations) than men. Regarding the moderating role of gender on the relationship between hedonic motives and attitudes, the negative impact of hedonic motives on attitudes toward saving water is stronger among women than men. This finding, which is consistent with previous studies (e.g., Jackson et al., 2011; Yang & Lee, 2010), implies that women are more hedonistic water consumers than men. Women are less inclined to sacrifice their own personal comfort for the sake of the environment, probably because of the intrinsically hedonic nature of tourism. This difference is observed despite the absence of gender differences in previous studies in the hotel sector (Han, Yu, Kim & Kim, 2018).

Third, concerning the perceived situational factors included in the model (i.e., destination problem awareness and destination attachment), the results suggest that guests' perceptions of a water scarcity problem in the destination are strongly related to guests' moral obligations. These results are in line with previous research on the hotel industry supporting the positive relationship between awareness of the consequences of a specific behavior and moral norms (e.g., Cheng & Tung, 2014; Han et al., 2015). The results also imply that the weaker a guest's attachment to a specific destination is, the greater that guest's hedonic motivation regarding water conservation will be. This finding is aligned with previous studies suggesting that tourists

with a strong attachment to a destination are more likely to make sacrifices for the environment, even at the expense of immediate self-interest, effort, or cost (Davis et al., 2011).

Finally, the results show no gender differences in the relationships between perceived situational factors and motives. In fact, the results also show no statistical differences between the mean values of DPA and DA for men and women (see Table 2). These findings somewhat contradict past research showing that women are more aware of local environmental problems (e.g., Davidson & Freudenburg, 1996) and develop stronger attachment and affective connections to a place than men (Hidalgo & Hernández, 2001; Rollero & De Piccoli, 2010). A possible explanation for this discrepancy may again be associated with the type of destination. Benidorm is not a nature-related destination with fragile social and ecological systems. These conditions are some of the prerequisites for building a strong connection with a place from a pro-environmental perspective (Silva et al., 2013).

In terms of theory, this study makes an important contribution by being one of the few studies to empirically show the superiority of hedonic motives over moral motives in explaining individuals' in-room water conservation behavior. Furthermore, the bulk of framing studies in sustainable tourism have predicted water conservation behavior or intention using only social or cognitive drivers (e.g., Han & Hyun, 2018b; Han et al., 2020). This study also included affective variables (hedonic motives and destination place attachment) to better characterize this behavior. Accordingly, this study is one of the first to explain in-room water conservation behavior using data collected from actual hotel guests while they were staying at the hotel. The data were gathered by interviewing individuals in a real consumption context. This fieldwork approach enabled a reduction in attribution bias with respect to recollections about past consumption because guests' feelings were being experienced at the time of data collection (Haggag et al., 2018). Similarly, this fieldwork approach meant that individuals could be asked about a specific tourist destination (Benidorm). Therefore, the data captured the importance of the destination in tourists' pro-environmental decisions. Additionally, no previous study has focused on analyzing gender differences in relation to water conservation behavior at hotels. Documenting the moderating effect of gender on in-room water conservation decision making fills a sizeable gap in the literature. The findings therefore contribute to research on guests' responsible behaviors and water consumption by providing a fresh perspective for future studies.

5.1. Practical implications

These findings have several practical implications. First, the positive relationship between guests' attitudes and behavior highlights the importance of developing strategies that foster tourists' positive attitudes toward the environment. These strategies could be implemented by hotel managers and other stakeholders that would benefit from a more sustainable use of water resources. Such stakeholders include destination management organizations (DMOs), hotel associations, and regional tourism organizations. One of the most widely applied measures consists of communication strategies to encourage positive attitudes toward the environment during a guest's stay. However, this strategy could likewise be applied from the moment at which tourists begin to plan and book their holidays. Many international tourists book their holidays in advance. For example, summer holidays are planned the previous winter. Therefore, these stakeholders have time to develop tourists' pro-environmental attitudes before these tourists actually arrive at their hotels. The results also show that the positive relationship between attitudes and behavior is stronger for women than men but that water conservation activities are actually quite rare among respondents (Mean = 3.99, SD = .82). In fact, previous research has shown that even in the presence of strong pro-environmental attitudes, consumers do not always behave in an environmentally friendly manner (Juvan & Dolnicar, 2014). This finding could be explained by the tradeoffs that often accompany this behavior (e.g., less comfort or convenience). Therefore, hotel managers seeking to decrease in-room water use should intensify their efforts to encourage guests' engagement in water conservation behaviors. They can do so by enhancing the attitudes of guests and by implementing strategies to encourage cooperation during their stay, especially among male customers. Here, nudges might be useful to promote the desired behavior. A nudge consists of any message, idea, or device that influences people to do the right thing without compromising their freedom of choice. Thus, hotel managers should provide clear and unambiguous messages that help tourists consciously adapt their habits and routine behaviors. If hotel managers do not remind tourists of the need to behave sustainably, then guests might simply forget or even neglect to perform this kind of behavior.

The findings also suggest that these strategies should emphasize normative motives (moral obligation) as opposed to hedonic motives because the latter have a negative impact on attitudes toward saving water. Tourists might feel less obliged to behave in an environmentally friendly way if the amount of effort required to do so makes it inconvenient to save water or if it represents more effort than it is worth. Thus, strategies to save water that require guests' collaboration must be as simple and easy to use as possible (e.g., dual flush buttons on toilets).

This approach can convince guests that their level of comfort and well-being will not be compromised.

Moreover, given that the effect of normative motives on attitudes is greater for men and that the effect of hedonic motives on attitudes is greater for women, the proposed strategy could actually have a greater effect on men than on women. A more effective strategy for female guests could include offering rewards for conserving water to mitigate the perceived effort and inconvenience associated with saving water when on vacation (hedonic motives).

Given the positive and significant effect of destination problem awareness on normative motives and the negative and significant effect of destination attachment on hedonic motives, it seems reasonable to assume that messages containing information on specific water-related destination problems could increase the effectiveness of communication strategies. Similarly, hotels could try to increase guests' pro-environmental attachment to the destination (destination loyalty), and not only to their facilities (brand loyalty), to indirectly promote in-room water conservation behaviors. Destination problem awareness and destination attachment could also be enhanced by DMOs. These organizations usually focus their communication strategies on perceptions of functional and hedonic dimensions. However, they should also raise tourists' awareness by providing information on the environmental problems in the destination (i.e., water scarcity) and should increase tourists' attachment to the destination. Providing a positive tourist experience is a critical way of strengthening place attachment (Hosany et al., 2017).

Finally, hotel managers could also try to personalize their in-room messages according to their guests' gender. While some rooms might be occupied by both male and female guests, it is very likely that other rooms will be occupied only by men or only by women. Using big data techniques, hotel managers might be able to anticipate these situations to develop different in-room strategies depending on guests' gender. A combination of destination information on water scarcity and messages focusing on the moral obligation to save water could effectively increase men's attitudes toward water conservation and thus men's water conservation behavior (e.g., "Water availability is a serious issue in Benidorm. We trust you to help us by saving as much water as possible during your stay."). For women, it might be more effective to highlight destination attachment and the negative environmental consequences of behaving hedonistically while staying at the hotel (e.g., "We know you love Benidorm, but it needs a little help from its friends. Please save water during your stay.").

5.2. Limitations and future research

The current study also has some limitations that should be addressed in future research. First, the data were gathered from a sample of hotel guests in Benidorm and cannot be generalized to all hotel customers or lodging contexts. Future research should validate these results for other types of lodging facilities (e.g., home sharing, vacation rentals, and campsites), other hotel categories (e.g., 1–3-star, luxury, or exclusive hotels), and other destinations with different water scarcity levels (e.g., Nordic countries and the Caribbean). Second, further research is needed to better understand gender differences by, for instance, comparing different tourism destinations with different affective images and personal attachment levels (e.g., natural protected areas, urban destinations, and rural settings). Third, future research should examine the existence of omitted variables that could improve the explanatory power of the proposed model (e.g., attribution of control). Finally, the proposed model is based on guests' self-reported water conservation behavior while staying at a hotel. Although self-reported behavior measures represent a more accurate indicator than, for example, behavioral intentions, it could be of interest to consider using measures of actual in-room water use and objective measures.

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Figure 1. Proposed theoretical model of guests' reported in-room water conservation behavior

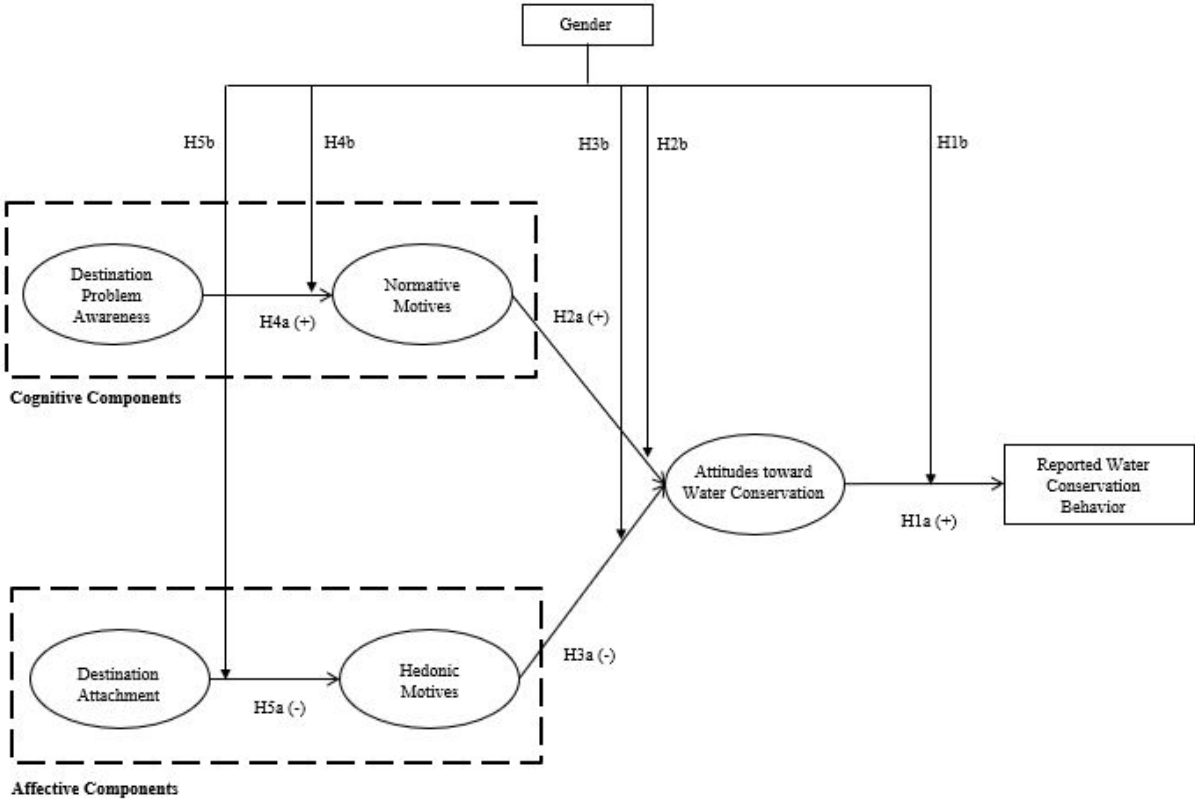


Table 1. Sample profile

Criteria	Levels	Full sample	(%)	Female	(%)	Male	(%)
Age	18–29	66	9.7	29	8.5	37	11.1
	30–44	118	17.3	67	19.6	51	15.3
	45–65	317	46.5	165	48.4	151	45.2
	66 or more	175	25.7	80	23.5	95	28.4
Education	No studies	44	6.5	24	5.7	20	6.0
	Primary education	96	14.1	53	12.6	43	12.8
	Secondary education	324	47.6	154	36.5	169	50.3
	University/college	215	31.6	111	26.3	104	31.0
Income (net monthly)	No income	36	5.3	21	6.2	15	4.5
	€300 or less	2	.3	2	.6	0	.0
	€301–€600	5	.7	3	.9	2	.6
	€601–€900	14	2.1	9	2.7	5	1.5
	€901–€1,200	48	7.0	27	8.0	21	6.3
	€1,201–€1,800	176	25.8	85	25.1	90	26.8
	€1,801–€2,400	240	35.2	117	34.5	123	36.6
	€2,401–€3,000	107	15.7	51	15.0	56	16.7
	€3,001–€4,500	28	4.1	14	4.1	14	4.2
€4,501 or more	20	2.9	10	2.9	10	3.0	
Country of residence	Spain	303	44.5	149	43.4	153	45.4
	UK	256	37.6	134	39.1	122	36.2
	Other	67	9.8	32	9.3	35	10.4
	Ireland	33	4.8	17	5.0	16	4.7
	Germany	14	2.1	6	1.7	8	2.4
	Russia	6	.9	4	1.2	2	.6
	France	2	.3	1	.3	1	.3

$n_{\text{total}} = 680$, $n_{\text{female}} = 337$ (49.5%) and $n_{\text{male}} = 343$ (50.5%)

Table 2. Descriptive statistics

	Destination problem awareness (DPA)	Normative motives (NM)	Destination attachment (DA)	Hedonic motives (HM)	Attitudes toward water conservation (ATT)	Reported water conservation behavior (RWCB)
DPA	-	.33**	.22**	-.34**	.32**	.25**
NM		-	.15**	-.34*	.39**	.31**
DA			-	.06	.04	-.05
HM				-	-.53**	-.61**
ATT					-	.42**
RWCB						-
Range	1–7	1–7	1–7	1–7	1–7	1.78–6.78
Mean (SD) for whole sample	4.54 (1.29)	4.45 (1.29)	4.99 (1.34)	3.63 (1.45)	5.51 (1.01)	3.99 (.82)
Mean (SD) for women	4.52 (1.26)	4.38 (1.31)	5.08 (1.31)	3.78 (1.43)	5.40 (1.02)	3.94 (.77)
Mean (SD) for men	4.56 (1.32)	4.52 (1.29)	4.90 (1.37)	3.48 (1.46)	5.61 (1.00)	4.03 (.86)
t test for equality of means	-.35	-1.45	1.69	2.62**	-2.66**	-1.50

n = 680 individuals. The aggregate variables were calculated as the arithmetic mean of the items of each factor.

**p < .01; *p < .05

Table 3. Reliability and convergent validity

Construct & items	Std. loading	Robust t	CRI	AVE
ATTITUDES TOWARD WATER CONSERVATION				
ATT1	.80	38.33**		
ATT2	.81	41.16**		
ATT3	.82	51.92**	.89	.62
ATT4	.78	35.65**		
ATT5	.71	30.55**		
NORMATIVE MOTIVES				
NM1	.69	23.53**		
NM2	.57	18.02**	.72	.50
NM3	.78	31.02**		
HEDONIC MOTIVES				
HM1	.91	73.72**		
HM2	.88	64.42**		
HM3	.80	54.46**		
HM4	.81	44.16**	.93	.65
HM5	.73	36.35**		
HM6	.76	38.20**		
HM7	.71	37.98**		
DESTINATION PROBLEM AWARENESS				
DPA1	.51	14.56**		
DPA2	.68	25.69**	.74	.50
DPA3	.87	34.24**		
DESTINATION ATTACHMENT				
DA1	.93	71.05**		
DA2	.94	93.80**		
DA3	.95	113.88**		
DA4	.93	65.29**	.98	.84
DA5	.88	58.92**		
DA6	.86	50.99**		
DA7	.94	90.17**		
DA8	.91	54.58**		
S-B χ^2 (289 df) = 1085.458 (p < .01), BBNFI = .933; BBNNFI = .943 , CFI = .950 , RMSEA = .066 [.062 - .070]				

n = 680 individuals. CRI = composite reliability index; AVE = average variance extracted. **p < .01; *p < .05.

Table 4. Discriminant validity

	DPA	MN	DA	HM	ATT
Destination problem awareness (DPA)	.49	.26	.13	.23	.21
Normative motives (NM)	[.43, .59]	.46	.05	.37	.40
Destination attachment (DA)	[.29, .44]	[.14, .29]	.84	.01	.01
Hedonic motives (HM)	[-.55, -.42]	[-.68, -.55]	[.06, .06]	.65	.55
Attitudes toward water conservation (ATT)	[.39, .52]	[.57, .70]	[.01, .12]	[-.78, -.70]	.62

n = 680 individuals. Values on the diagonal correspond to the average variance extracted. Values above the diagonal correspond to the shared variances (squared correlations). Values below the diagonal correspond to the 95% confidence intervals for the estimated factor correlations.

Table 5. Invariance testing

	χ^2	Robust χ^2	df	$\Delta\chi^2$	Δ df	RMSEA (90% CI)	SRMR	CFI	TLI (NNFI)
Single group (loose cross-validation):									
Women	748.75	689.58	289			.066 [.059, - .072]	.16	.96	.96
Men	751.31	681.35	289			.066 [.059, - .072]	.16	.96	.96
Measurement invariance:									
equal form (configural invariance)	1500.06	1370.86	578			.066 [.061, - .070]	.16	.96	.96
Equal factor loading (metric invariance)	1593.35	1441.12	604	68.66**	26	.066 [.062, - .070]	.16	.96	.96

**p < .01 *p < .05

Table 6. Hypothesis testing: multigroup estimation

Hyp.	Relationship	Total sample (1)		Multigroup model (2)				$\Delta\chi^2$ ($\Delta df = 1$)	p	Gender effect
				Women		Men				
		Std. load	Robust t	Std. load	Robust t	Std. load	Robust t			
H1	ATT --> RWCB	.63**	24.62	.76	26.82**	.57	17.33**	27.07	.01	Difference
H2	NM --> ATT	.34**	10.09	.25	6.96**	.44	11.23**	3.88	.05	Difference
H3	HM --> ATT	-.69**	25.61	-.79	-24.04**	-.53	-17.39**	51.80	.01	Difference
H4	DPA --> NM	.63**	11.17	.70	10.90**	.70	12.38**	1.27	.26	Equality
H5	DA --> HM	-.39**	-13.48	-.49	-13.13**	-.50	-14.66**	1.98	.16	Equality

(1) Total sample (n = 680): $SB\chi^2(df = 319) = 1,690.12$; $BBNNFI = .91$; $CFI = .92$; $RMSEA = .084$ [.080, -.088]

$R^2(RWCB) = .391$; $R^2(ATT) = .679$; $R^2(NM) = .397$; $R^2(HM) = .152$

(2) Multigroup (n = 680): $SB\chi^2(df = 319) = 2,156.76$; $BBNNFI = .93$; $CFI = .93$; $RMSEA = .087$ [.082, -.091]

Group 1 (women), Group 2 (men): $R^2(RWCB) = .572, .324$; $R^2(ATT) = .790, .618$; $R^2(NM) = .490, .493$; $R^2(HM) = .237, .252$

**p < .01 *p < .05