

## Predictors of willingness to pay a price premium for hotels' water-saving initiatives

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# **Predictors of willingness to pay a price premium for hotels' water-saving initiatives**

## **Abstract**

This study examines customers' willingness to pay a premium to support hotels' water-saving initiatives and the effect of different explanatory variables: attitude toward water conservation, water problem awareness, willingness to sacrifice, reported water-saving behavior, and frugality. A Heckit model is applied to a sample of 681 tourists. Results show that 44.3% of tourists would pay a premium to stay in a hotel that had installed water-saving devices in rooms. The average price premium they would pay is 4.29 euros. These findings offer interesting insights for hotel managers to identify tourists who could contribute to reducing the costs of going green.

**Keywords:** willingness to pay, water-saving initiatives, hotel management, environmental concern, price premium, problem awareness, willingness to sacrifice, reported behavior, frugality, Heckit model

## 1. Introduction

Climate change is a global problem. Weather events are becoming more extreme as weather patterns change, disrupting national economies and affecting lives (UN, 2020). Several authors have highlighted the growing pressure on water resources as one of the consequences of climate change (Gosling & Arnell, 2016). This pressure can lead to problems associated with water scarcity. The Mediterranean is one specific region that will suffer an increase in water stress. This trend is consistent across all climate change patterns leading to an increase in the average global temperature (Gosling & Arnell, 2016). The year 2019 was the second warmest on record, and 2010 to 2019 was the warmest decade ever recorded (UN, 2020). Water availability is threatened not only by climate change but also by pollution, population growth, tourism, and other factors (Aprile & Fiorillo, 2017; Gössling et al., 2012). To address some of these issues, this study contributes to the stream of research on specific water conservation initiatives in the tourism industry from a consumer perspective.

Introducing practices to lower hotels' environmental impact involves substantial capital investment. Accordingly, some hotel managers may be reluctant to "go green." Despite the expected reduction in operating costs due to lower energy or water consumption (Armas-Cruz, 2011), the cost of introducing sustainable management practices remains a major barrier to adoption in the hotel industry (Yeh, Fotiadis, Huang, & Huan, 2017).

Hotels could consider introducing a price premium to help mitigate the costs of such initiatives, as long as customers are willing to pay this premium for green accommodation. Scholars have attempted to estimate hotel customers' willingness to pay for such environmental initiatives. However, the literature provides contradictory results. Some studies have shown that tourists, motivated by a range of environmental attitudes and concerns, are willing to pay a price premium (Dimara, Manganari, & Skuras, 2017; Susskind, 2014). However, other studies have shown that tourists are not willing to pay more for hotels' environmental initiatives. In fact, tourists would actually want to pay less than for non-sustainable hotels, claiming that hotels should bear the costs of such practices because these practices save hotels money (Baker, Davis, & Weaver, 2014). Guests also allege that such practices would reduce their level of comfort (Chia-Jung & Pei-Chun, 2014). Therefore, further research is needed to broaden the current understanding of tourists' commitment to sustainable consumption in hotels.

Previous research on willingness to pay a premium for specific sustainable practices has examined hotels' towel reuse programs (e.g., Dimara et al., 2017) and energy-related initiatives (e.g., Kostakis & Sardianou, 2012; Susskind, 2014). However, the impact of hotels' water-saving measures remains unexplored. Hotels and destination managers are especially concerned

about water availability and sustainable water use (Gössling & Peeters, 2015; Gössling et al., 2012). This concern is particularly strong in crowded and water-scarce destinations such as the Mediterranean region (Roson & Sartori, 2014). Therefore, the first contribution of the current study is to examine guests' willingness to pay a premium for hotels' water-saving initiatives. The study divides tourists' willingness to pay into two stages: first, the willingness to pay a premium and, second, the amount of money the tourists would be prepared to pay. These decisions are simultaneously estimated using a Heckit model because they are non-independent and nested. Previous research has mainly focused on guests' willingness to pay more to stay at green or eco-friendly hotels. Thus, the second contribution of this study is to examine a sample of non-green hotels.

The third contribution of this study is to examine the effect of cognitive, psychographic, and behavioral variables on willingness to pay a premium for hotels' water-saving measures. Building on well-known theories within the environmental hospitality literature, this research examines new variables that have not been tested in this context. Specifically, the study considers willingness to sacrifice to save water, reported water-saving behavior, and frugality. These variables are analyzed together with more common variables such as attitudes toward water conservation and water problem awareness (e.g., Han, 2015). Thus, this study responds to recent calls for further research into: (i) the effect of personal values and concerns on guests' water conservation decisions while staying at hotels (Han & Hyun, 2018); (ii) eco-friendly behavior in the hospitality industry by examining the effect of different combinations of variables (Agag, Brown, Hassanein, & Shaalan, 2020); and (iii) frugal consumer identities associated with pro-environmental behaviors (Gatersleben, Murtagh, Cherry, & Watkins, 2019). Finally, the study also controls for the effect of guests' sociodemographic characteristics (gender, age, education, income, and country of residence) and contextual factors (room price), which have previously been considered in similar contexts (Dimara et al., 2017; Han, Hsu, Lee, & Sheu, 2011).

## **2. Literature review**

### **2.1 Willingness to pay a price premium for hotels' water-saving measures**

Hotels' environmental initiatives have grown because of two main factors. First, the hotel industry has recognized the strategic benefits of going green, namely reducing operating costs and enhancing corporate image. Hotels are also aware of the long-term impact of sustainability on tourism competitiveness (Hu & Wall, 2005). Second, the hotel industry is under pressure

from stakeholders, particularly consumers, who are becoming more aware of environmental problems and are demanding that firms adopt environmental practices (Martínez-García de Leaniz, Herrero-Crespo, & Gómez-López, 2018). However, environmental practices are not free for hotels (Kuminoff, Zhang, & Rudi, 2010). Charging a price premium is thus becoming a strategic measure to attract pro-environmental consumers who are willing to pay more for sustainable accommodation (Martínez-García de Leaniz et al., 2018). The price premium involved in positive willingness to pay can be defined as “the excess price paid over and above the ‘fair’ price justified by the ‘true’ value of the product” (Rao & Bergen, 1992, p. 412).

Regarding guests’ reactions to hotels’ environmental practices, the literature explores guests’ willingness to pay for green hotels (see Table 1). Most previous studies have examined several sustainable initiatives simultaneously. However, this approach prevents the extrapolation of the findings to the implementation of a specific measure or to the context of non-green hotels, which would be of interest for hotel managers (Dimara et al., 2017). Nevertheless, there are some exceptions. Certain specific measures have been considered, with scholars examining the willingness to pay a premium for towel reuse or renewable energy initiatives (Dimara et al., 2017; Kostakis & Sardianou, 2012; Susskind, 2014). Dimara et al. (2017) focused on consumers’ willingness to reuse towels in hotels, finding that 44.1% of hotel customers are willing to pay a premium for this initiative. Kostakis and Sardianou (2012) examined the determinants of tourists’ intentions to pay more to stay in a hotel that used renewable energy sources and showed that 45% of tourists were willing to pay more for accommodation in such hotels. A similar result was reported by Susskind (2014) for hotels’ energy saving initiatives. The present study is aligned with this stream of research. It examines guests’ willingness to pay a premium for hotels’ sustainable water use initiatives, thereby addressing an under-researched context.

Insert Table 1 around here.

Previous studies have considered different theories to examine the effect of several variables on guests’ propensity to pay a premium for a hotel’s sustainable measures (see Table 1). Recent calls have been made for further research on eco-friendly behavior in the hospitality industry to study the effect of different combinations of variables (Agag et al., 2020). In response to these calls, this study examines guests’ willingness to pay a premium using cognitive, behavioral, psychographic, and sociodemographic variables. All these variables have a common link in that they specifically refer to the concerns and personal efforts of individuals

to conserve water in their daily lives and while traveling. The use of these variables constitutes a novel approach. This approach meets the basic criteria of Ajzen's (1985, 1991) theory of planned behavior (TPB). According to the TPB, the relationships between environmental beliefs and intentions (as immediate antecedents of behaviors) should be studied at a corresponding level of specificity. In this study, this level of specificity refers to saving water. The remainder of this section justifies the hypotheses regarding the effects of the proposed variables on guests' willingness to pay a premium for hotels' water-saving initiatives.

## **2.2 Attitudes toward water conservation**

Previous research has revealed a positive relationship between guests' attitudes and willingness to pay a premium in green hotels (Han, Hsu, & Lee, 2009) and ecotourism (Hultman, Kazemina, & Ghasemi, 2015). The theoretical foundation for this relationship is based on the theory of planned behavior (TPB; Ajzen, 1991), as suggested by Kim and Han (2010). According to this theory, the attitudes of individuals toward a specific behavior offer a strong predictor of their behavioral intentions. Specifically, Untaru et al. (2016) found a positive relationship between individuals' attitudes toward water conservation and intentions to conserve water in a hotel context. Similarly, having favorable attitudes toward saving water while traveling could be expected to increase guests' willingness to pay a price premium for hotels' water-saving initiatives. This expectation is in line with research by Hultman et al. (2015), who reported a positive relationship between the affective component of ecotourism attitudes (the emotions elicited by the possibility of engaging in ecotourism) and willingness to pay for ecotourism. Therefore, the following hypothesis is proposed:

**Hypothesis 1.** *Guests with a positive attitude toward water conservation are more likely to pay a premium for hotels' water-saving practices.*

## **2.3 Water problem awareness**

Environmental awareness can be defined as an individual's knowledge of the existence of environmental problems (Hurst, Dittmar, Bond, & Kasser, 2013). It has been considered a critical factor in explaining pro-environmental behaviors and intentions (Stern, 2000). Previous studies have shown a positive relationship between environmental problem awareness and intentions to visit green or eco-friendly hotels (Cheng & Tung, 2014; Kim & Han, 2010).

Recent research has examined how people's environmental awareness of the negative effects of the hotel industry on the environment (namely water scarcity and pollution) affects their

water-saving intentions at a hotel (Han, Chua, & Hyun, 2019). Kang, Stein, Heo, and Lee (2012) found that hotel guests with higher degrees of environmentalism were more willing to pay a premium for hotels' green initiatives. The authors drew upon social identity theory (Tajfel & Turner, 1986) and means-end theory (Gutman, 1982) as the theoretical foundations underpinning this positive relationship. Social identity theory would help explain why customers with high environmental concern identify more with companies that engage in environmental initiatives and why they are more willing to pay a premium for these initiatives. In contrast, means-end theory would explain why individuals with environmental concern are more willing to pay a premium for companies' environmentally friendly initiatives to satisfy their personal values (self-esteem). Kostakis and Sardianou (2012) also pointed out that environmental awareness affects willingness to pay more when staying in a hotel that uses renewable energy sources. Based on the existing evidence, it is posited that when guests are more aware of tourism-related water problems, they are more willing to pay a price premium for hotels' water-saving initiatives. Therefore, the following hypothesis is proposed:

**Hypothesis 2.** *Guests with a high level of water problem awareness are more prone to pay a premium for hotels' water-saving practices.*

#### **2.4 Willingness to sacrifice to save water**

Willingness to sacrifice for the environment can be defined as the desire to put the well-being of the environment before one's own most immediate individual interests (Davis, Le, & Coy, 2011). The theoretical framework supporting this idea is Schwartz's (1977) norm-activation theory, where the assumption is that individuals have a sense of personal obligation (moral responsibility) to care about others. Examining pro-environmental decisions in a hotel context, Rahman and Reynolds (2016) found that willingness to sacrifice for the environment was a significant predictor of guests' willingness to pay more for a green hotel. Regarding water conservation behavior in hotels, Han and Hyun (2018) also found that guests' willingness to sacrifice for the environment had a positive influence on intentions to conserve water and intentions to recommend water conservation. Moreover, individuals who are strongly engaged in relationships are more willing to accept the monetary costs of maintaining that relationship (Rahman & Reynolds, 2016; Van Lange, Agnew, Harinck, & Steemers, 1997). Based on the above, it is expected that guests who are strongly committed to saving water while staying at hotels will be more likely to pay a premium for hotels' water-saving initiatives. Therefore, the following hypothesis is proposed:

**Hypothesis 3.** *Guests with a high level of willingness to sacrifice to save water are more likely to pay a premium for hotels' water-saving practices.*

## **2.5 Reported water-saving behavior**

Of the wide range of activities related to water consumption in hotels, those related to consumption in guests' rooms are among the most important (Untaru et al., 2016). In-room water use includes behaviors that are directly related to water use, such as taking showers, flushing the toilet, and brushing teeth, as well as behaviors such as bed linen and towel replacement. Thus, reported water conservation behavior refers to any individual effort aimed at saving water in relation to these uses (Marandu, Moeti, & Joseph, 2010). This behavior can be explained by goal-framing theory (Lindenberg & Steg, 2007), assuming that people's motives to save water while traveling are mainly normative (to act appropriately). These proactive measures while traveling can be seen as a type of environmentally conscious behavior (Han et al., 2010; Kim & Han, 2010). Guests who strive to save water during their stay show an obvious interest in or concern for environmental issues. Chan (2013) also found evidence that guests are willing to participate in green practices while staying at green hotels. Finally, Kim and Han (2010) showed that environmentally conscious behavior increases willingness to pay for an eco-friendly hotel product. Therefore, the following hypothesis is proposed:

**Hypothesis 4.** *Guests with a high level of reported water-saving behavior are more likely to pay a premium for hotels' water-saving practices.*

## **2.6 Frugality**

In identity theory, it is assumed that individuals have many identities that shape their behaviors because people tend to act in a way that is congruent with these identities (Oyserman, 2009). Consumer identities have been reported to significantly influence pro-environmental behavior (Gatersleben et al., 2019). Of these identities, frugality appears to be particularly strongly linked to specific behaviors aimed at reducing consumption, such as water conservation. As stated by Goldsmith and Flynn (2015), frugality refers to the individual actions aimed at avoiding the waste of resources, goods, and services. Previous research has examined the relationship between frugality and pro-environmental attitudes and behaviors (Fujii, 2006; Gatersleben, Murtagh, & Abrahamse, 2014; Gatersleben et al., 2019). Gatersleben et al. (2019) found that frugality is linked to lower environmental impact more than other consumer identities such as

thriftiness or morality. The authors also found that frugality is an important consumer identity for behaviors such as energy conservation. They called for “more research evidence on the context-dependence of identities related to pro-environmental behavior” (Gatersleben et al., 2019, p. 45). Fujii (2006) showed that attitudes toward frugality positively affect the reduction of gas and electricity use, based on results for a sample of Japanese respondents. Again, further research in different cultural contexts was encouraged. Conversely, Gatersleben et al. (2014) did not find an effect of frugality on the pro-environmental intentions of avoiding car use, not flying to holiday destinations, buying fair trade coffee and tea, and recycling. To date, no study has examined the impact of frugality in relation to water-saving. Walcher and Ihl (2020) emphasized that several value shifts are expected in the coming years, such as the shift from indulgence to frugality. These shifts could have a direct, positive impact on willingness to pay a price premium. This change in values would reflect social responsibility, which is directly linked to willingness to pay. Therefore, the following hypothesis is proposed:

**Hypothesis 5.** *Frugal guests are more likely to pay a premium for hotels’ water-saving practices.*

### 3. Research design

#### 3.1. Method

A Heckit model was employed to test guests’ willingness to pay a premium for hotels’ water-saving initiatives. This model has been applied to tourist behavior (e.g., Nicolau & Mas, 2005). It has also been used to estimate the willingness to pay for sustainable products (e.g., Sellers & Nicolau, 2016). The underlying idea of this model is to divide tourists’ intentions into two steps: first, willingness (or lack of willingness) to pay a premium to stay at a hotel with water-saving practices and, second, the amount of money the tourist would be willing to pay. The model is represented by the following two equations:

$$b_i^* = \sum_{r=1}^R \gamma_r \mathbf{T1}_{ir} + \mathbf{u}_i \quad (1)$$

$$M_i = \sum_{s=1}^S \beta_s \mathbf{T2}_{is} + \varepsilon_i \text{ observed only if } b_i^* > 0 \quad (2)$$

Here,  $\mathbf{T1}_{ir}$  consists of  $r$  variables. These variables represent the sociodemographic and psychographic characteristics of tourist  $i$  that determine the decision to pay a price premium to stay at a hotel with water-saving devices in its rooms ( $b_i$ ). The term  $\gamma_r$  denotes the coefficients

associated with these variables. The term  $b_i$  is a binary variable that takes the value 1 when the latent variable is greater than zero ( $b_i^* > 0$ ), and 0 otherwise. The term  $T2_{is}$  represents a set of  $s$  sociodemographic and psychographic characteristics associated with deciding how much money ( $M_i$ ) the tourist would be prepared to pay. The term  $\beta_s$  reflects the effect of these variables. The error terms  $u_i$  and  $\varepsilon_i$  follow a bivariate standard normal distribution with standard deviations  $\sigma_u$  and  $\sigma_\varepsilon$  and covariance  $\sigma_{u\varepsilon}$ . Full information maximum likelihood was employed to calculate the parameter estimates.

### **3.2. Research context and measures**

The hypothesized relationships were examined in the context of hotel guests in Benidorm (Spain). Benidorm is one of the most important “sun and sand” tourist destinations in the Mediterranean region, a perfect example of mass tourism. Benidorm received more than 11 million tourists in 2018, and it is the fourth biggest tourist destination in Spain (INE, 2019). The area where Benidorm is located suffers from water scarcity and intense pressure from tourism-related water demand (Casares-Blanco, Fernández-Aracil, & Ortuño-Padilla, 2019). These characteristics make this destination an exceedingly interesting setting for the purposes of the present investigation.

The constructs used in the study were adapted from previous studies. The dependent variable, willingness to pay, was operationalized as a dummy variable. This variable took the value 1 if the tourist would be willing to pay a premium, and 0 otherwise. The money that the tourist would be willing to pay was operationalized as a quantitative variable. This approach of decomposing tourists’ willingness to pay into two variables has been employed by Kang et al. (2012) in the hotel context. Details of the independent variables are shown in Table 2. Cronbach’s alpha values (where applicable) were higher than the generally accepted threshold of 0.70. Scores on all the items were averaged for the purposes of subsequent analysis.

Insert Table 2 around here.

The method also controlled for several sociodemographic variables and the contextual factors of room price. These variables were operationalized as follows: Gender (1 = men; 0 otherwise); Age (measured in years); Income (measured by monthly income in euros); Education level (ordinal variable with four categories); Country of residence (1 = tourists living in Spain; 0 otherwise); and Price per room per night (in euros).

### 3.3 Data collection

For the data collection, an interviewer-administered questionnaire survey was used. The data were collected by a professional market research institute ([www.likert.eu](http://www.likert.eu)). The questionnaire was distributed to tourists staying in five 4-star hotels and one 3-star hotel of a mid-sized hotel chain located in Benidorm (Spain). Quotas were defined for the sample design using the key tourism variables of age, gender, and country of origin, based on previous data on incoming tourists to Benidorm (GVA, 2016). As explained by Podsakoff et al. (2003), similarity in self-reported measures may lead to common methods bias (CMB) because interviewees may be susceptible to social desirability bias (Kormos & Gifford, 2014). This form of bias is a common problem in studies of sustainable tourism (Juvan & Dolnicar, 2017). To reduce the likelihood of CMB, the following well-established recommendations were applied. First, all interviewers received detailed training on the questionnaire to reduce tourists' reluctance to answer, improve response quality, and avoid the bias traditionally associated with this method in the field of sustainability and tourism (Dahlgren & Hansen, 2015). Second, interviewers approached tourists in the hotel and explained that a study was being conducted to examine the water consumption of guests during their stay. No more specific details were given to reduce self-report bias. Respondents were assured of the anonymity and confidentiality of their responses and were reassured that there were no correct or incorrect answers. Third, the order of the questions on the questionnaire was designed not to reveal the exact purpose of the study earlier than necessary to avoid social desirability bias. Fourth, instead of asking about generic pro-environmental behavior, specific items linked to the actual water behavior of guests in their hotel rooms were employed to avoid the limitations of self-reported pro-environmental behavior (Kormos & Gifford, 2014). Fifth, some scales employed reverse items to prevent extreme response and acquiescence response biases (Baumgartner & Steenkamp, 2001). Sixth, the questionnaire was pretested with an initial sample of tourists under the same conditions as the final sample to improve and refine the item wording (Krosnick, 1999). Only guests that had already spent at least three nights at the hotel were selected. Data were collected between July and August 2019 (summer season). On average, the questionnaire was completed on the fifth day of the stay and took 8 minutes to complete. After data cleaning of the initial sample of 758 respondents (questionnaires with repeat responses and incomplete questionnaires were removed) only 681 responses were found to be valid. Table 3 presents the descriptive statistics for the sample. The average room price paid per night was 115.72 euros (SD = 27.59).

Insert Table 3 around here.

#### 4. Results

To identify the drivers of tourists' willingness to pay a premium (both the decision to pay and the amount), a Heckit model was used (Table 4). First, multicollinearity was tested by examining the correlation and calculating the variance inflation factor (VIF). All values were below the threshold of 10 (Neter et al., 1985). For Model 1 and Model 2, the correlation (Rho) between the disturbances of the decision to pay a premium and the amount was significantly different from 0. This result confirms the advantage of using a Heckit model for this analysis because this model allows the error terms to co-vary. More importantly, consumer decisions can be broken down into a two-step process: first, the decision to pay a premium and, second, the amount of money that consumers would pay. The results indicate that 44.3% of tourists would pay a premium to stay in a hotel that had installed water-saving devices in its rooms. The average reported premium per stay was 4.29 euros (SD = 1.78). Of the guests who would not pay a premium (55.7%), most (56.61%) argued that it should be the hotel (or the government) that should bear the cost. Many guests (18.52%) stated that they could not be sure that the extra money they paid would be used for that purpose.

Insert Table 4 around here.

Contrary to the hypothesized relationship, the estimation of Model 1 shows that attitudes toward water conservation do not have an impact on willingness to pay a premium for water-saving measures. Accordingly, Hypothesis 1 is rejected. However, the other hypothesized relationships are supported. Water problem awareness (H2), willingness to sacrifice to save water (H3), reported water-saving behavior (H4), and frugality (H5) positively and significantly affect willingness to pay a premium. Regarding the control variables, only age, level of education, and country of residence affect guests' willingness to pay a premium for hotels' water-saving initiatives.

Model 2 can be used to examine the determinants of the amount of money that tourists would pay. Willingness to sacrifice to save water and reported water-saving behavior have significant and negative coefficients. Seemingly, tourists who are prepared to make sacrifices and report having tried to save water during their stay at the hotel would pay a lower premium than consumers who do not behave or think that way. The price paid for the room also has a positive

and significant coefficient, indicating that tourists who have paid more for their rooms would pay a higher price premium.

## **5. Discussion and conclusions**

Sustainable water use is becoming an increasingly important part of tourism (Hadjikakou et al., 2015). Reducing the water used by hotels is desirable. However, the cost of such initiatives might mean higher accommodation prices. Therefore, guests' collaboration is essential. The present study examined guests' willingness to pay a premium to stay at a hotel that has implemented water-saving initiatives. It thus addressed an under-explored stream of research. Benidorm, a Mediterranean "sun and sand" mass tourism destination where water is a scarce resource, was chosen as the study setting.

The results show that 44.3% of tourists would pay a premium to stay in a hotel with water-saving practices. This finding is consistent with previous research indicating that some tourists are willing to financially support initiatives by sustainable hotels (Dimara et al., 2017; Kang et al., 2012; Kostakis & Sardinou, 2012). Tourists believe that by paying a premium for sustainable initiatives, they are contributing to the environment and society. The average premium per stay they would pay is 4.29 euros.

The second objective of the study was to test the effect of several explanatory variables on guests' willingness to pay. The findings show that the effect of attitudes toward water conservation on willingness to pay a premium for water-saving measures is not statistically significant. This result contradicts previous findings such as those of Han et al. (2009), who found that customers with more favorable attitudes toward eco-friendly behaviors in their everyday lives are willing to pay more to stay at a green hotel. However, previous studies have shown a weak association between attitudes toward water conservation and actual water conservation behavior (Miller & Buys, 2008). A possible explanation for this gap between attitudes and behavior might be the travel context, where individuals may care more about comfort levels (hedonic motivations) than awareness (Dolnicar, Cvelbar, & Grün, 2019).

Nonetheless, the analysis shows a positive and significant relationship between water problem awareness and willingness to pay a premium. This finding is in line with previous studies that have shown an association between awareness of environmental problems and individuals' pro-environmental behaviors (e.g., Chen & Tung, 2014; Han et al., 2019; Kang et al., 2012; Kim & Han, 2010). The willingness to sacrifice to save water also positively affects the willingness to pay a premium. This finding is in line with previous results showing a relationship between willingness to sacrifice for the environment and willingness to pay more

(Rahman & Reynolds, 2016). Moreover, guests who have been actively involved in saving water in the past are more willing to pay a premium to support those activities. This result indicates that the past environmental behaviors of conscious, committed guests influence their future decisions (i.e., willingness to pay). Frugal guests are also more willing to pay a premium for water-saving initiatives. This finding is in line with previous research showing that frugality is strongly associated with energy conservation behaviors (Gatersleben et al., 2019).

Regarding the control variables, age has a positive and significant effect. Hence, older individuals are more willing to pay a price premium. This result is in line with the findings of Kostakis and Sardianou (2012) and Susskind (2014). The level of education is also significant. People with higher levels of education are more willing to pay a price premium, echoing the findings of Dimara et al. (2017). Country of residence has a negative and significant coefficient, indicating that people living in Spain have a lower propensity to pay a premium. This finding is in line with those of Dimara et al. (2017), who found that foreign tourists are more inclined to adopt towel reuse programs in hotels. However, the results suggest that gender and household income do not affect guests' willingness to pay more for water-saving practices. Han et al. (2011) also reported no effect of income on customers' intentions to pay more for a green hotel. In contrast, they did find that women were more likely to pay more than men. Differences in results may be because the present study examined non-green hotels.

This study contributes to the literature by examining a combination of cognitive, psychographic, behavioral, and sociodemographic variables in the under-researched context of willingness to pay a premium for hotels' water-saving initiatives. The findings show that guests' personal concerns and efforts regarding water conservation play a more important role than attitudinal determinants in explaining guests' willingness to pay a premium to promote water conservation. The commitment of individuals to water conservation is reflected by their reported problem awareness, water conservation behavior, and willingness to sacrifice. This commitment translates into a higher likelihood of accepting a price premium while traveling, as long as the sustainable use of water is guaranteed. Furthermore, the study expands existing knowledge about the effect of consumer identities on pro-environmental behavior. Specifically, the study examined frugality as a determinant of willingness to pay a premium for hotels' water-saving initiatives. Whereas other consumer identities have received much attention, frugality remains less well understood (Gatersleben et al., 2019).

## **5.1 Managerial implications**

In general, these results highlight the importance for hotel managers of considering tourists' environmental behaviors, concerns, and awareness when seeking to implement water-saving measures that raise the price of accommodation. Therefore, hotel managers could emphasize and appeal to these factors when communicating their offerings. Hotels could try to enhance guests' destination problem awareness to indirectly promote a positive willingness to pay. Hotels usually focus their communication strategies on perceptions of functional and hedonic value dimensions. However, they should also raise tourists' awareness by providing information on the environmental problems of the destination (i.e., water scarcity). Hotel managers should also be aware that consumers who are willing to sacrifice to save water and who report water-saving behaviors would pay a lower premium. Seemingly, the implementation of water-saving measures should not cause any inconvenience to customers, especially if they have already tried to reduce their ecological footprint by reducing their water consumption. Thus, water-saving strategies that require guests' collaboration must be as simple and easy to use as possible (e.g., dual flush buttons in toilets). This simplicity can help convince tourists that their comfort and well-being will not be threatened. These tourists are willing to pay extra. However, if they behave in a more environmentally friendly fashion while at the hotel, they will be willing to pay a smaller premium. Therefore, the price premium should be balanced with the customer's perceived self-involvement or sacrifice. The results also indicate that specific identities can promote specific (beneficial) pro-environmental behaviors. Thus, a focus on frugality could be of great interest to successfully promote water-saving measures.

Additionally, hotel managers should be aware that older tourists are most willing to pay a price premium. Similarly, international visitors have a higher propensity to pay a premium. This finding might act as an incentive to focus on this tourist segment. Although hotels can reap the financial benefits of reducing water consumption, these practices often create a financial burden in the short term. This financial burden is one of the biggest barriers to their implementation. Hotels targeting elderly and international tourists might have greater incentives to implement water-saving measures and to charge room prices that reflect the cost of these initiatives.

Moreover, the price paid for the room also has a positive and significant coefficient, indicating that hotel managers could charge a higher premium for more expensive rooms. Interestingly, most of the guests who would not pay a premium argue that the hotel (or the government) should bear the cost. Many of these guests state that they cannot be sure that the extra money they pay will actually be used for the right purpose. Thus, hotel managers should provide clear and unambiguous messages that remind tourists of the need for collective

sustainable behavior and to assure guests that the price premium will help support the cost of implementing water-saving devices.

## **5.2 Limitations and future research**

This study has some limitations that could provide the basis for future research. First, this paper focuses on water-saving initiatives. These initiatives are just one of the many types of eco-friendly initiatives that hotels might implement to improve their long-term sustainability. Second, the study context was limited to a sample of four-star hotels in a Mediterranean “sun and sand” tourist destination. Further research is needed in other destinations (e.g., urban) and other lodging contexts (e.g., rental accommodation) to generalize the findings. Third, the willingness to pay is estimated through contingent valuation. Hotel managers should not forget that the intention to pay does not always translate into actual real behavior. Future studies could also explore the effect of other factors on willingness to pay a premium. Notable examples include both individual factors (e.g., customers’ emotions) and contextual factors (e.g., place attachment). Fourth, the data were collected only during the summer season. Therefore, the data might fail to cover the full range of guest profiles. For instance, the sample might under-represent elder tourism, which is one of the most important target markets of Benidorm during the low season and the mid-season. Focusing specifically on this tourist segment could offer an interesting avenue for future research. Despite these limitations, the present study offers a new and highly relevant perspective that could help managers and scholars understand hotel guests’ water consumption behaviors.

## References

- Agag, G., Brown, A., Hassanein, A., & Shaalan, A. (2020). Decoding travellers' willingness to pay more for green travel products: Closing the intention-behaviour gap. *Journal of Sustainable Tourism*, 28(10), 1551–1575. <https://doi.org/10.1080/09669582.2020.1745215>
- Aprile, M. C., & Fiorillo, D. (2017). Water conservation behavior and environmental concerns: Evidence from a representative sample of Italian individuals. *Journal of Cleaner Production*, 159, 119–129. <https://doi.org/10.1016/j.jclepro.2017.05.036>
- Armas-Cruz, Y. (2011). Determinants of environmental management and implications for firms' economic performance. *Journal of Environmental Planning and Management*, 54(8), 1077–1106. <https://doi.org/10.1080/09640568.2010.549401>
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action Control*. SSSP Springer Series in Social Psychology (pp. 11–39). Heidelberg: Springer. [https://doi.org/10.1007/978-3-642-69746-3\\_2](https://doi.org/10.1007/978-3-642-69746-3_2)
- Ajzen, I., 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Baker, M. A., Davis, E. A., & Weaver, P. A. (2014). Eco-friendly attitudes, barriers to participation, and differences in behavior at green hotels. *Cornell Hospitality Quarterly*, 55(1), 89–99. <https://doi.org/10.1177/1938965513504483>
- Baumgartner, H., & Steenkamp, J. B. E. (2001). Response styles in marketing research: A cross-national investigation. *Journal of Marketing Research*, 38(2), 143–156. <https://doi.org/10.1509/jmkr.38.2.143.18840>
- Casares-Blanco, J., Fernández-Aracil, P., & Ortuño-Padilla, A. (2019). Built environment and tourism as road safety determinants in Benidorm (Spain). *European Planning Studies*, 27(7), 1314–1328. <https://doi.org/10.1080/09654313.2019.1579784>
- Chan, E. S. W. (2013). Gap analysis of green hotel marketing. *International Journal of Contemporary Hospitality Management*, 25(7), 1017–1048. <http://dx.doi.org/10.1108/IJCHM-09-2012-0156>
- Chang, L. H., Hsiao, Y. C., Nuryyev, G., & Huang, M. L. (2015). People's motivation, constraints and willingness to pay for green hotels. *European Journal of Tourism Research*, 9, 67–77.

- Chen, M. F., & Tung, P. J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221–230. <https://doi.org/10.1016/j.ijhm.2013.09.006>
- Chia-Jung, C., & Pei-Chun, C. (2014). Preferences and willingness to pay for green hotel attributes in tourist choice behavior: The case of Taiwan. *Journal of Travel & Tourism Marketing*, 31(8), 937–957. <https://doi.org/10.1080/10548408.2014.895479>
- Dahlgren, G. H., & Hansen, H. (2015). I'd rather be nice than honest: An experimental examination of social desirability bias in tourism surveys. *Journal of Vacation Marketing*, 21(4), 318–325. <https://doi.org/10.1177/1356766715577503>
- Davis, J. L., Le, B., & Coy, A. E. (2011). Building a model of commitment to the natural environment to predict ecological behavior and willingness to sacrifice. *Journal of Environmental Psychology*, 31(3), 257–265. <https://doi.org/10.1016/j.jenvp.2011.01.004>
- Dimara, E., Manganari, E., & Skuras, D. (2017). Don't change my towels please: Factors influencing participation in towel reuse programs. *Tourism Management*, 59, 425–437. <https://doi.org/10.1016/j.tourman.2016.09.003>
- Dolnicar, S., Cvelbar, L. K., & Grün, B. (2019). A sharing-based approach to enticing tourists to behave more environmentally friendly. *Journal of Travel Research*, 58(2), 241–252. <https://doi.org/10.1177/0047287517746013>
- Fujii, S. (2006). Environmental concern, attitude toward frugality, and ease of behavior as determinants of pro-environmental behavior intentions. *Journal of Environmental Psychology*, 26(4), 262–268. <https://doi.org/10.1016/j.jenvp.2006.09.003>
- Gabarda-Mallorquí, A., Fraguell, R. M., & Ribas, A. (2018). Exploring environmental awareness and behavior among guests at hotels that apply water-saving measures. *Sustainability*, 10, 1305. <https://doi.org/10.3390/su10051305>
- Gatersleben, B., Murtagh, N., & Abrahamse, W. (2014). Values, identity and pro-environmental behaviour. *Contemporary Social Science*, 9(4), 374–392. <https://doi.org/10.1080/21582041.2012.682086>
- Gatersleben, B., Murtagh, N., Cherry, M., & Watkins, M. (2019). Moral, wasteful, frugal, or thrifty? Identifying consumer identities to understand and manage pro-environmental behavior. *Environment and Behavior*, 51(1), 24–49. <https://doi.org/10.1177/0013916517733782>

- Goldsmith, R. E., & Flynn, L. R. (2015). The etiology of frugal spending: A partial replication and extension. *Comprehensive Psychology*, 4, 2165–2228. <https://doi.org/10.2466/09.20.CP.4.4>
- González-Rodríguez, M., Díaz-Fernández, M., & Font, X. (2020). Factors influencing willingness of customers of environmentally friendly hotels to pay a price premium. *International Journal of Contemporary Hospitality Management*, 32(1), 60–80. <https://doi.org/10.1108/IJCHM-02-2019-0147>
- Gosling, S. N., & Arnell, N. W. (2016). A global assessment of the impact of climate change on water scarcity. *Climatic Change*, 134(3), 371–385. <https://doi.org/10.1007/s10584-013-0853-x>
- Gössling, S., & Peeters, P. (2015). Assessing tourism's global environmental impact 1900-2050. *Journal of Sustainable Tourism*, 23(5), 639–659. <https://doi.org/10.1080/09669582.2015.1008500>
- Gössling, S., Peeters, P., Hall, C. M., Ceron, J., Dubois, G., Lehmann, L. V., & Scott, D. (2012). Tourism and water use: Supply, demand and security. An international review. *Tourism Management*, 33(1), 1–15. <https://doi.org/10.1016/j.tourman.2011.03.015>
- Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46(2), 60–72. <https://doi.org/10.1177/002224298204600207>
- GVA (2016). Profile of the tourist who visits the Valencian Community Results 2016 [in Spanish]. Government of the Generalitat Valenciana. Available at: <https://xurl.es/1or4m> (Accessed 6/11/2019).
- Hadjikakou, M., Miller, G., Chenoweth, J., Druckman, A., & Zoumides, C. (2015). A comprehensive framework for comparing water use intensity across different tourist types. *Journal of Sustainable Tourism*, 23(10), 1445–1467. <https://doi.org/10.1080/09669582.2015.1044753>
- Han, H. (2015). Travelers' pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and theory of planned behavior. *Tourism Management*, 47, 164–177. <https://doi.org/10.1016/j.tourman.2014.09.014>
- Han, H., Chua, B. L., & Hyun, S. S. (2019). Eliciting customers' waste reduction and water saving behaviors at a hotel. *International Journal of Hospitality Management*, <https://doi.org/10.1016/j.ijhm.2019.102386>

- Han, H., Hsu, L. T., & Lee, J. S. (2009). Empirical investigation of the roles of attitudes toward green behaviors, overall image, gender, and age in hotel customers' eco-friendly decision-making process. *International Journal of Hospitality Management*, 28(4), 519–528. <https://doi.org/10.1016/j.ijhm.2009.02.004>
- Han, H., Hsu, L. T., Lee, J. S., & Sheu, C. (2011). Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *International Journal of Hospitality Management*, 30(2), 345–355. <https://doi.org/10.1016/j.ijhm.2010.07.008>
- Han, H., & Hyun, S. S. (2018). Eliciting customer green decisions related to water saving at hotels: Impact of customer characteristics. *Journal of Sustainable Tourism*, 26(8), 1437–1452. <https://doi.org/10.1080/09669582.2018.1458857>
- Hu, W., & Wall, G. (2015). Environmental management, environmental image and the competitive tourist attraction. *Journal of Sustainable Tourism*, 13(6), 617–635. <https://doi.org/10.1080/09669580508668584>
- Hultman, M., Kazemina, A., & Ghasemi, V. (2015). Intention to visit and willingness to pay premium for ecotourism: The impact of attitude, materialism, and motivation. *Journal of Business Research*, 68(9), 1854–1861. <https://doi.org/10.1016/j.jbusres.2015.01.013>
- Hurst, M., Dittmar, H., Bond, R., & Kasser, T. (2013). The relationship between materialistic value and environmental attitudes and behaviors: A meta-analysis. *Journal of Environmental Psychology*, 36, 257–269. <https://doi.org/10.1016/j.jenvp.2013.09.003>
- INE (2019). Encuesta de ocupación hotelera [Hotel occupation national survey]. Spanish National Institute of Statistics (INE). Available at: <https://www.ine.es/dynt3/inebase/index.htm?padre=239>
- Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, 31(2), 564–572. <https://doi.org/10.1016/j.ijhm.2011.08.001>
- Kim, Y., & Han, H. (2010). Intention to pay conventional-hotel prices at a green hotel – a modification of the theory of planned behavior. *Journal of Sustainable Tourism*, 18(8), 997–1014. <https://doi.org/10.1080/09669582.2010.490300>

- Kormos, C., & Gifford, R. (2014). The validity of self-report measures of proenvironmental behavior: A meta-analytic review. *Journal of Environmental Psychology*, 40, 359–371. <https://doi.org/10.1016/j.jenvp.2014.09.003>
- Kostakis, I., & Sardianou, E. (2012). Which factors affect the willingness of tourists to pay for renewable energy? *Renewable Energy*, 38(1), 169–172. <https://doi.org/10.1016/j.renene.2011.07.022>
- Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology*, 50(1), 537–567. <https://doi.org/10.1146/annurev.psych.50.1.537>
- Kuminoff, N.V., Zhang, C., & Rudi, J. (2010). Are travelers willing to pay a premium to stay at a “green” hotel? Evidence from an internal meta-analysis of hedonic price premia. *Agricultural and Resource Economics Review*, 39 (3), 468–484. <https://doi.org/10.1017/S1068280500007450>
- Lindenberg, S., & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues*, 63(1), 117–137. <https://doi.org/10.1111/j.1540-4560.2007.00499.x>
- Marandu, E. E., Moeti, N., & Joseph, H. (2010). Predicting residential water conservation using the theory of reasoned action. *Journal of Communication*, 1(2), 87–100.
- Martínez-García de Leaniz, P., Herrero-Crespo, A., & Gómez-López, R. (2018). Customer responses to environmentally certified hotels: The moderating effect of environmental consciousness on the formation of behavioral intentions. *Journal of Sustainable Tourism*, 26(7), 1160–1177. <https://doi.org/10.1080/09669582.2017.1349775>
- Miller, E., & Buys, L. (2008). The impact of social capital on residential-affecting behaviours in a drought-prone Australian community. *Society & Natural Resources* 21(3), 244–257. <https://doi.org/10.1080/08941920701818258>
- Neter J., Wasserman, W., & Kutner, M. (1985). *Applied linear statistical models: Regression analysis of variance and experimental design*. Chicago: Irwin.
- Nicolau, J. L., & Más, F. J. (2005). Heckit modelling of tourist expenditure: evidence from Spain. *International Journal of Service Industry Management*, 16(3), 271–293. <https://doi.org/10.1108/09564230510601404>

- Oyserman, D. (2009). Identity-based motivation: Implications for action-readiness, procedural-readiness, and consumer behavior. *Journal of Consumer Psychology*, 19(3), 250–260. <https://doi.org/10.1016/j.jcps.2009.05.008>
- Rahman, I., & Reynolds, D. (2016). Predicting green hotel behavioral intentions using a theory of environmental commitment and sacrifice for the environment. *International Journal of Hospitality Management*, 52, 107–116. <https://doi.org/10.1016/j.ijhm.2015.09.007>
- Rao, A. R., & Bergen, M. E. (1992). Price premium variations as a consequence of buyers' lack of information. *Journal of Consumer Research*, 19(3), 412–423. <https://doi.org/10.1086/209311>
- Roson, R., & Sartori, M. (2014). Climate change, tourism and water resources in the Mediterranean. A general equilibrium analysis. *International Journal of Climate Change Strategies and Management*, 6(2), 212–228. <https://doi.org/10.1108/IJCCSM-01-2013-0001>
- Sellers, R., & Nicolau, J. L. (2016). Estimating the willingness to pay for a sustainable wine using a Heckit model. *Wine Economics and Policy*, 5(2), 96–104. <https://doi.org/10.1016/j.wep.2016.09.002>
- Steg, L., & de Groot, J. (2010). Explaining prosocial intentions: Testing causal relationships in the norm activation model. *British Journal of Social Psychology*, 49, 725–743. <https://doi.org/10.1348/014466609X477745>
- Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407–424. <https://doi.org/10.1111/0022-4537.00175>
- Schwartz, S. H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 10, pp. 221–271). New York: Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)60358-5](https://doi.org/10.1016/S0065-2601(08)60358-5)
- Susskind, A. M. (2014). Guests' reactions to in-room sustainability initiatives: An experimental look at product performance and guest satisfaction. *Cornell Hospitality Quarterly*, 55(3), 228–238. <https://doi.org/10.1177/1938965514533744>
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel, & L.W. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7–24). Chicago: Nelson-Hall.

- UN (2020). Flagship UN study shows accelerating climate change on land, sea and in the atmosphere. United Nations. Available at: <https://news.un.org/en/story/2020/03/1059061> (Accessed 13/06/2020).
- Untaru, E. N., Ispas, A., Candrea, A. N., Luca, M., & Epuran, G. (2016). Predictors of individuals' intention to conserve water in a lodging context: The application of an extended Theory of Reasoned Action. *International Journal of Hospitality Management*, 59, 50–59. <https://doi.org/10.1016/j.ijhm.2016.09.001>
- Van Lange, P. A. M., Agnew, C. R., Harinck, F., & Steemers, G. E. M. (1997). From game theory to real life: How social value orientation affects willingness to sacrifice in ongoing close relationships. *Journal of Personality and Social Psychology*, 73(6), 1330–1344. <https://doi.org/10.1037/0022-3514.73.6.1330>
- Walcher, D., & Ihl, C. (2020). Determinants of willingness to pay when purchasing sustainable products: A study from the shoe industry. In R. Tiwari, & S. Buse (Eds.), *Managing Innovation in a Global and Digital World* (pp. 287–303). Wiesbaden: Springer Gabler.
- Yarimoglu, E., & Gunay, T. (2019). The extended theory of planned behavior in Turkish customers' intentions to visit green hotels. *Business Strategy and the Environment*, 29(3), 1097–1108. <https://doi.org/10.1002/bse.2419>
- Yeh, S., Fotiadis, A., Huang, M. & Huan, T. (2017). Barriers to Implementing Green Management in the Hospitality Industry. *Advances in Hospitality and Leisure*, 13, 47–61. <https://doi.org/10.1108/S1745-354220170000013004>

Table 1. A summary of empirical studies focusing on guests' willingness to pay a premium for hotels' sustainable initiatives from 2010 to 2020

Authors (year)	Sustainable initiative (general vs. specific)	Theory	Explanatory variables
Chang, Hsiao, Nuryyev, & Huang (2015)	General: green hotels	-	Sociodemographics (age, gender, marital status, occupation, family status) Motivation (physiological, safety, love and belonging, esteem, self-actualization) Constraints (personal, interpersonal, environmental)
Dimara, Manganari, & Skuras (2017)	Specific: towel reuse program	-	Sociodemographics (age, family size, education, domestic vs. foreign tourists) Psychographic (environmentalism: daily conservation practices) Behavioral/Travel-related (prior experience, high vs. low-priced hotels, duration of stay)
González-Rodríguez, Díaz-Fernández, & Font (2020)	General: environmentally friendly practices/hotel	Social identity theory Value-belief-norm theory	Environmental concern scale (egoistic, social-altruistic, biospheric) Hotel environmental image and practices
Han, Hsu, Lee, & Sheu (2011)	General: green practices/hotel	Theory of planned behavior (modified) Social theory (gender)	Eco-friendly attitudes in daily life Sociodemographics (gender, age, education, household income, experience)
Kang, Stein, Heo, & Lee (2012)	General: environmentally sustainable hotel	Social identity theory Means-end theory	New ecological paradigm scale (NEP) Sociodemographics (gender, income, age, education, marital status, children, work experience in a hotel)
Kim & Han (2010)	General: green hotel	Theory of planned behavior (modified)	Hotel type Environmental concerns Perceived customer effectiveness Environmentally conscious behavior Behavioral, normative, and control beliefs Attitude toward the behavior Subjective norm Perceived behavioral control

Authors (year)	Sustainable initiative (general vs. specific)	Theory	Explanatory variables
Kostakis & Sardianou (2012)	Specific: energy conservation	-	Sociodemographics (gender, age, marital status, children, education, individual income) Travel-related factors (duration of stay, average holiday cost) Daily life (energy conservation at home) General and specific problem awareness Previous satisfaction
Martínez García de Leaniz, Herrero-Crespo, & Gómez-López (2018)	General: environmentally certified hotels	Image theory	Green practices Green image Environmental consciousness
Rahman & Reynolds (2016)	General: green hotel	Value theory Commitment model Interdependence theory	Biospheric value orientation Willingness to sacrifice for the environment
Susskind (2014)	Specific: energy saving changes	-	Sociodemographics (gender, age, income)
Yarimoglu & Gunay (2019)	General: green practices/hotel	Theory of planned behavior (extended)	Attitudes toward green hotels Subjective norms Perceived control Environmentally friendly activities Overall image Visit intention

Table 2. Reliability and average means of the explanatory variables.

Scale items (7-point scales)	Cronbach's alpha	Mean (SD)
Attitude toward water conservation (Adapted from: Han, 2015) For me, saving water in hotels when I'm traveling is: ATT1. (1 = Very bad; 7 = Very good) ATT2. (1 = Not important; 7 = Very important) ATT3. (1 = Very unpleasant; 7 = Very pleasant) ATT4. (1 = Very useless; 7 = Very useful) ATT5. (1 = Very harmful; 7 = Very beneficial)	0.783	4.429 (0.821)
Water problem awareness (Adapted from: Han, 2015; Steg & de Groot, 2010) WPA1. The tourism industry can cause natural resources such as water to run out (1 = strongly disagree; 7 = strongly agree) WPA2. I am concerned about the amount of water that the hotel industry consumes (1 = strongly disagree; 7 = strongly agree) WPA3. The environmental damage to water (scarcity, pollution, etc.) caused by tourism is very serious (1 = strongly disagree; 7 = strongly agree)	0.762	5.106 (1.207)
Willingness to sacrifice to save water (Adapted from: Davis et al., 2011; Han & Hyun, 2018) WTS1. I'm willing to give up things I like doing if they are bad for water resources (1 = strongly disagree; 7 = strongly agree) WTS2. Even when it's inconvenient, I'm willing to do what I think is best to save water (1 = strongly disagree; 7 = strongly agree) WTS3. I'm willing to take on responsibilities to help save water (1 = strongly disagree; 7 = strongly agree)	0.873	4.748 (1.492)
Reported water-saving behavior (Adapted from: Gabarda-Mallorquí, Fraguell, & Ribas, 2018) RB1. How often have you done something to save water during your stay? (1 = never; 7 = all the time)	-	4.71 (1.511)
Frugality (Adapted from: Gatersleben et al., 2019) FR1. I am a consumer who avoids waste of any kind such as energy or water (a frugal consumer) (1 = strongly disagree; 7 = strongly agree)	-	5.22 (1.479)

Table 3. Descriptive statistics (N = 681)

Variable		Frequency	Percentage
Gender	Female	343	50.4
	Male	337	49.5
Age	18–24	36	5.3
	25–34	58	8.5
	35–44	90	13.2
	45–54	132	19.4
	55–64	170	25
	>= 65	190	27.9
	Education	No studies	44
Primary education		96	14.1
Secondary education		324	47.6
University education		215	31.6
Income	Under 900 euros	57	8.4
	900–1,200 euros	48	7
	1,201–1,800 euros	176	25.8
	1,801–2,400 euros	240	35.2
	> 2,400 euros	155	22.7
Country of residence	Spain	303	44.5
	Other	378	55.5

Table 4. Results of the Heckit estimation models.

	Estimate	SD	<i>z</i>	<i>p</i> value
Model 1				
Intercept	-4.234*	0.549	-7.712	0.000
Gender	0.104	0.107	0.9720	0.331
Age	0.010*	0.004	2.585	0.010
Income	0.024	0.030	0.7802	0.435
Room price	0.002	0.002	0.7395	0.460
Education level	0.117***	0.067	1.736	0.083
Country of residence	-0.452*	0.123	-3.662	0.000
Attitude toward water conservation	0.110	0.088	1.252	0.211
Willingness to sacrifice to save water	0.127*	0.046	2.786	0.005
Water problem awareness	0.133*	0.050	2.637	0.008
Reported water-saving behavior	0.128*	0.045	2.863	0.004
Frugality	0.113*	0.043	2.629	0.009
Model 2				
Intercept	14.032*	3.539	3.965	0.000
Gender	0.357	0.452	0.791	0.429
Age	-0.009	0.017	-0.539	0.590
Income	-0.0409	0.134	-0.3009	0.764
Room price	0.034*	0.009	3.853	0.000
Attitude toward water conservation	0.298	0.382	0.779	0.436
Willingness to sacrifice to save water	-0.459**	0.218	-2.108	0.035
Water problem awareness	-0.344	0.229	-1.503	0.133
Reported water-saving behavior	-0.787*	0.202	-3.891	0.000
Frugality	-0.012	0.174	-0.068	0.946
lambda	-2.211**	0.954	-2.316	0.021
Sigma	3.874			
Rho	-0.571			
logL	-1128.513			

\* *p* value < 0.01; \*\* *p* value < 0.05; \*\*\* *p* value < 0.1.